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THE
FLORIST AND POMOLOGIST:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

EDITED BY

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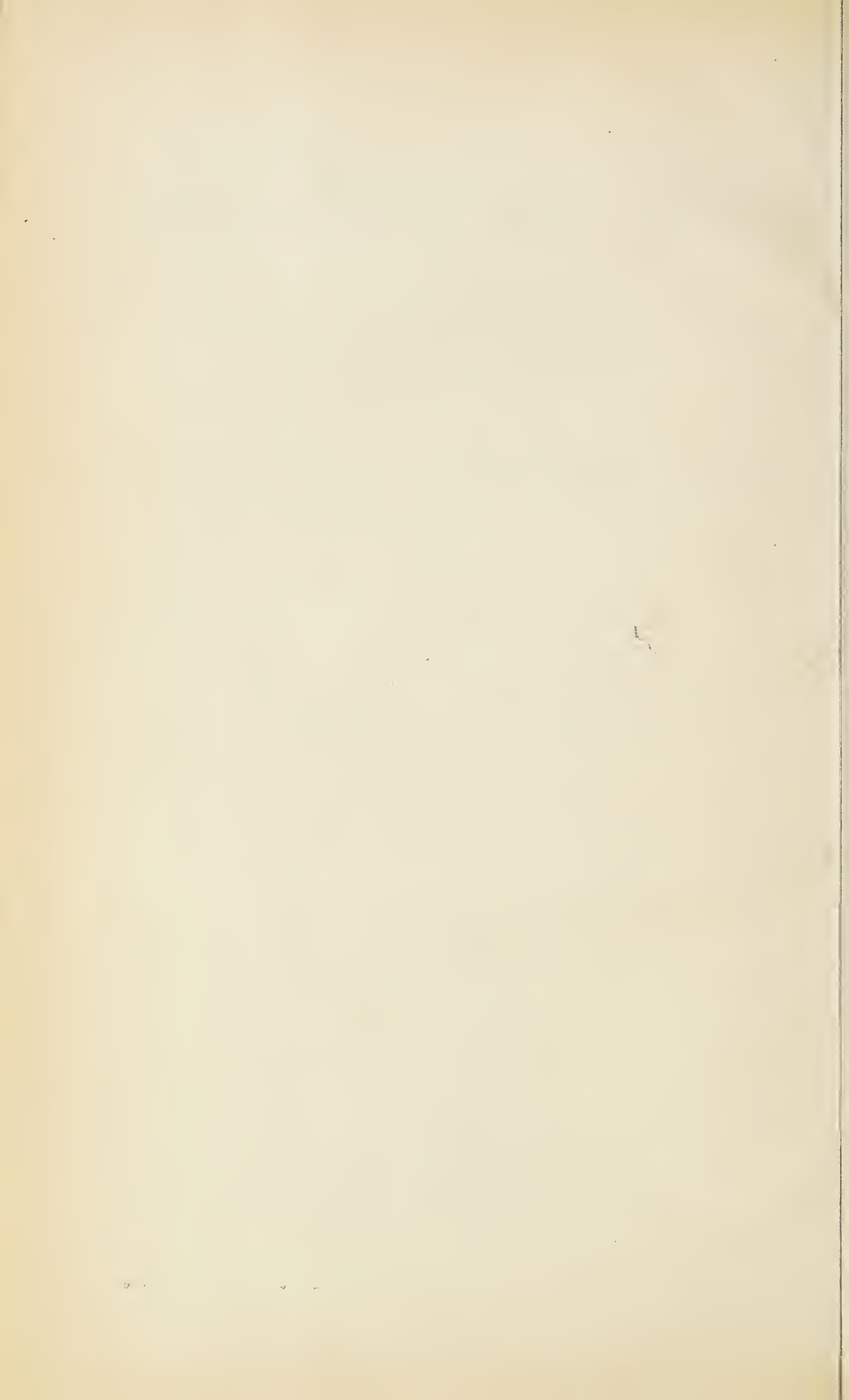
"INDEX FILICUM," "THE HANDBOOK OF BRITISH FERNS," ETC.

1879.

LONDON:

PUBLISHED FOR THE PROPRIETORS, BY
MESSRS. KENT & CO., 23 PATERNOSTER ROW, E.C.

MDCCCLXXIX.



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XERONEMA Moorei, 20.
YE-GOMA, 111.
ZAMIA amplifolia, 20.





THE
FLORIST AND POMOLOGIST.

PINE-APPLE LADY BEATRICE LAMBTON.

[PLATE 482.]

IT is with much satisfaction that we open our volume for 1879 with a portrait of one of the noblest and handsomest varieties of the king of fruits which has yet been obtained. It is one of about thirty seedlings raised some few years since from the Montserrat, at Lambton Castle, by Mr. Stevens, who was then gardener there; and it has since been proved to be both distinct and desirable by Mr. Hunter, who has also become famous for his titanic clusters of high-class grapes. We are indebted to the latter gentleman for the fine specimen, which Mr. Rosenberg has faithfully portrayed, and of which portrait M. De Panne-maeker has given in the annexed plate a very accurate reproduction. Other distinct varieties of considerable promise, have, we believe, been observed amongst the seedlings, as well as some which are remarkable as curiosities.

We learn from Mr. Hunter that the variety now figured, named Lady Beatrice Lambton, is somewhat taller than the Smooth-leaved Cayenne, and more erect in its habit of growth. The leaves are dark green and prickly at the edge, the spines being strong and widely set, about four to the inch. The flowers are purple. The fruit is very large, pyramidal, from fourteen to fifteen pips in depth, and averaging about 10 lb. in weight (it has been grown to 11 lb. 7 oz.), the individual pips being broad; measuring an inch across, plump when properly swelled, of a deep orange colour in the prominent parts, yellower in the furrows, the scales or bracts subtending each pip being of a bright coppery-red. It will thus be seen that it is really both a noble and a handsome fruit.

The quality also is of a high order of merit. As regards its flesh and flavour, the former, in the examples we have examined, was of a pale semi-transparent yellow, with soft yellow fibres towards the firmer axis or centre, and exceedingly tender and melting towards the circum-

ference. The flavour was rich and excellent, with very abundant refreshing juice. Mr. Hunter informs us that in the case of a fruit of 10 lb. weight, cut at Christmas, 1873, and used for dessert at the Castle, he poured from the dish when it was brought from table three-fourths of a tumblerful of the syrupy juice, and our experience quite accords with this statement. This very abundant juice is, in truth, one of its characteristic features, and one which points to its great value as a summer fruit. When ripened in spring, it is found to be quite equal to the Cayenne and Charlotte Rothschild; indeed, Mr. W. Thomson, of Clovenfords, states that having often tasted it both in summer and winter, he is of opinion that while it far exceeds in size the Enville, which it resembles in shape, it equals the Queen and Smooth Cayenne in flavour, and in this respect far exceeds them in winter. Mr. D. Thomson speaks approvingly of its very free fruiting habit, and also bears testimony to its beauty and good qualities, it being, he remarks, "the most handsome pine in cultivation," and in the winter season "remarkably juicy, and much better flavoured than Smooth Cayenne or Charlotte Rothschild." The fruit grows close down in the heart of the plant, quite the opposite of its parent, which throws its fruit out of the foliage.

Various causes, which it is not necessary here to discuss, have conspired to prevent this fine new Pine from being put into commerce at an earlier period, one of which, we learn, is its shyness in producing suckers. Its merit has, from the first, been fully appreciated at Lambton, both in the Castle, and in the Garden. A sufficient stock has now been obtained to permit of its being offered to the public; and for this purpose it has passed into the hands of Messrs. Ireland and Thomson, of the Craigleith Nurseries, Edinburgh, by whom it is being distributed.—T. MOORE.

VINES AND VINE-CULTURE.

CHAPTER XV.—VINE BORDERS, THEIR FORMATION, ETC. (*continued*).

DRAINAGE.—This is one of the most important operations in the formation of a Vine Border, and one that in some situations entails a considerable amount of expense and trouble, to render it efficient. It is a point that must always be taken into consideration in selecting the position for a Vinery, for if the soil cannot be drained freely and easily, it is not a proper situation for the cultivation of grapes. Since Vines will not succeed well in a low, damp situation, it is best to choose for them a rather high position, though not necessarily an exposed one—on a gentle incline, it may be, when the work of drainage will be almost accomplished. Many places with gravelly subsoil, even if on the level, are well drained naturally, and so require little preparation; but it is not well to trust too much to natural conditions, though they are apparently favourable. It is better to take all ordinary precautions at the first, rather than to run any risks, and after several years of loss and disappointment, have the work all to do over again.

In all cases, therefore, a considerable amount of draining material should be placed over the whole surface of the bed of the border—say from 1 ft. to 2 ft. or more in depth, according to the breadth of the border, the nature of the subsoil, &c. At the back of the border, for example, we should place a depth of 2 ft. of drainage, allowing it to slope to, say, 18 in. at the front, where a drain 12 in. lower still should be formed, to carry off all superabundant moisture. The best material, generally very accessible, for the drainage of a vine-border will be found in old brick and lime rubbish, the rougher and larger pieces being placed at the bottom, finishing with the finer on the top, these forming a barrier which prevents the drainage materials from becoming choked by the soil being washed down amongst them.

In very cold, wet, clayey soils, it is often advisable to place a layer of concrete over the bottom of the border. This will prevent the damp from arising, and cut off any possibility of the roots descending; but even in this case it is still advisable to place the bed of brick-rubbish, as already recommended. The beneficial effect of drainage is not alone that of

drawing off the superfluous moisture, but the consequence of this being done is to raise the temperature of the soil. A well-drained border is not only drier, but warmer by a good many degrees, than a water-logged or undrained one. No better illustration than this can be given of the immense importance of thorough drainage for the roots of the Vine.

Raised or Terraced Borders.—In low-lying situations, the plan of raising the borders above the level of the surrounding soil is greatly to be recommended. The borders thus form, as it were, a sort of raised terrace, the height of which may and will vary, of course, according to circumstances, but it need seldom exceed the intended depth of the prepared soil, the drainage material commencing at the natural or surface-level of the ground. A border raised in this way will be comparatively warm and dry, by reason of its elevation.

In the erection of a Vinery, it will thus be seen that every contingency ought to be taken into consideration,—not only the position or situation, but also the level of the border itself. The amount of excavation necessary in making up the border will be determined by its depth, measuring from the surface-level; thus a border raised $2\frac{1}{2}$ ft. requires only to be excavated to a depth sufficient to take the drainage. It is a piece of folly often perpetuated to dig for the vine-border a great deep hole, which it is impossible to drain, and which, therefore, when filled with rubble, becomes a great well or cess-pool for the drainage of the surrounding ground. Than this, nothing could be much more injurious for the roots of vines. The lowest part of the foundation of the border should be provided with an efficient drain sunk lower still.

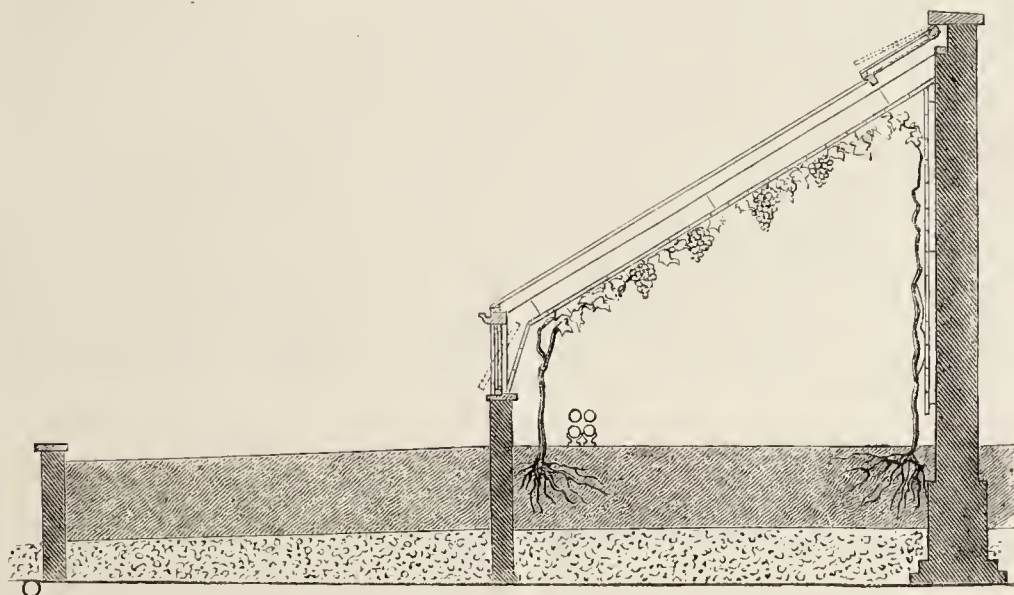
Heated and Aërated Borders.—Vine-borders may be heated artificially in a variety of ways: for example, by their formation over heated tanks, or by hot-water pipes placed in various positions, &c., on which we need not here enlarge. For exceptional cases, where extra early forcing is required, some means of this sort may be adopted with advantage; but experience has proved that in a general way but little advantage is secured in comparison with the increased cost of the heating.

Aërated borders are so called through having a series of drain-tiles or pipes, communicating with the outer air, placed underneath the soil amongst the drainage material. These serve, to some extent, to warm the border, and to sweeten and purify the materials of which it is composed. There can be little doubt that considerable benefit is derived by the adoption of some means of this sort, in low-lying situations. It is, in fact, but an elaborate system of drainage, excellent in theory, and efficient when well carried out, but often failing in action, and for general purposes not requisite.

Covering.—It has long been customary, and so has come to be considered necessary, that vine-borders should be at all times covered

able, which should be renewed from time to time as required, until the grapes begin to colour. This dressing or mulching of manure induces the emission of numerous surface-roots, and in poor soils is the chief mode of supplying sustenance to the Vines.

Watering.—A great deal depends on this. More Vines are ruined through want of water, perhaps, than from any other cause. The quantity of water which Vines require in well-drained borders, is astonishing. They can scarcely receive an over-supply during the growing season. Inside borders require the most attention in respect to watering. Before the Vines are started into growth, every particle of soil should be thoroughly saturated, and from the



with some fermenting material. It is, however, not so. The beneficial effects of frost on the soil is well known, and it is good practice to expose the soil of a vine-border to its action as much as possible. For early forcing, a good covering of dry leaves, or a continued supply of hot fermenting manure and leaves is very necessary, not only to ward off cold rains, &c., but to keep up the temperature of the border. For late and general purposes, the border is better exposed to the full and free action of the weather.

Mulching.—This is very necessary, not only as a means of enrichment for the roots of the Vine, but for the prevention of evaporation, whereby a greater and more constant degree of humidity is maintained. Therefore, as soon as the Vines get into full leaf, apply a good dressing of several inches of the best manure attain-

time they come into leaf until the ripening of the fruit, a weekly supply of tepid manure-water should be given. Outside as well as inside borders should receive constant attention as to watering during the summer, but no special rules as to time or quantity can be given, so much depending upon the nature of the soil used, its composition and drainage. When the fruit begins to ripen, a somewhat drier condition should be maintained, but it is not advisable to allow them to become very dry, even then.

Renovating Old or Exhausted Borders.—Old and apparently worn-out Vines are sometimes restored to comparative vigour by the removal of the effete soil, and the supply of fresh material for the roots. It is often advisable to do this. The total renewal of a vinery—vines, border, and all—is not at all times expedient.

It means—excepting in large establishments, where other houses may supply the temporary want—the loss of a few years' crop of fruit, and this is a rather serious matter. It is the fear of this loss, however little it may be, that often prevents the adoption of any adequate means of improvement. But be it known to all concerned, that by careful and judicious management, Vine borders may be renewed entirely without any loss whatever, and we may then, as a consequence, see fewer poor grapes. One difficulty in the way of accomplishing this renewal, is to get the fruit the Vines may be producing, ripe in time for the operation to be performed early enough to get the roots in action in the new soil before the end of the season. This is the great end to be achieved. The mere renewal of the soil is easily done.


As soon, therefore, as the fruit may be cut, whilst the leaves are yet fresh and green, say, about the end of July, commence by clearing away the old soil, tracing out tenderly all the roots that may be found; these must be carefully shaded and protected from the sun, and moreover, frequently syringed, to keep them moist. Then make up the border with fresh soil, as already recommended, and carefully replant the roots as soon as possible. Much depends upon the time taken up in doing this, as the Vine roots suffer much if kept long out of the soil; but with proper care, a few days under these conditions will not cause them material injury.

It is necessary to completely shade the Vines at this time, and to maintain a close, warm, growing atmosphere; that is, the atmosphere of the house must be completely saturated with moisture, and the vines frequently syringed, so as to cause them to commence active growth again. When this is accomplished, the roots will also be getting established, and after about a month or so, the ordinary attention may be resumed.

Another mode of renewal often adopted, where the roots exist partly in the inside and partly in the outside border, is to renew entirely the one-half one season, the other half the next. The roots in this case may be considerably shortened. Some daring cultivators will also partially renew a vine border by boldly clearing away a certain portion, roots and all, and refilling the space with fresh soil.

The commonest practice, however, is to clear away as much of the top-soil as possible, laying the roots bare, and then adding fresh soil. This, in a lesser degree, would be called *Top-dressing*. The top-dressing material should consist of good loam and ground bones or horn-shavings, rather richer than that recommended for the formation of the border. Any depth of this may be applied, and if properly attended to in regard to moisture, the roots will soon permeate through the entire mass, and great benefit will be derived by the Vines. All these partial renewals may be effected during the period when the vines may be said to be at rest.—A. F. BARRON.

ROSE CUTTINGS AS ROSE STOCKS.

HE battle of Stocks for Roses has scarcely yet been fought, far less has any decisive victory been won. There has been too great a run on Briers, the Manetti, and a few others. These have suited fairly well, have lived here, died there, and served trade interests everywhere. Hence, perhaps, their continued popularity. But the Brier is far from satisfactory. Left in its own native hedge-bank, it is hardy, vigorous, and may be said to live for ever. But moved into the garden, and crowned with the finer Roses, it lives, on an average, from three to five years. Instead of the Brier infusing its primitive strength and vigour into the Rose, the Rose cripples the vigour and brings down the longevity of the Brier to—no, below—its own level. The last is, in fact, the most curious thing about it, for Roses on their own roots live far longer than on the Brier; while Briers, left alone, live no one knows how long.

And yet the shortening of the life of budded or grafted Roses, can hardly be said to come

through any want of completeness or perfection in the mere union between the scion or bud and the stock. That seems as thorough and perfect as can be, the two becoming one in less time than in most other plants. No weakness or fault, as a rule, can be discovered at the point of union. On the contrary, the roots and the tops generally give way or die. No doubt, many such deaths arise from the use of rootless Briers and from their bad or barbarous treatment, alike before and after budding. But after discounting all these obvious and accidental causes of death, it is plain that other causes must operate, to produce the alarmingly high death-rate among worked Roses.

Among these, may not remote degrees of consanguinity have an important influence? As our Roses improve, they are getting further and yet further removed from the Dog-rose, Manetti, and other stocks. May not this fact account for new Roses dying in larger numbers than the older ones? I am aware there are other reasons for this. The buds are often

weakened by what may be termed high pressure or express cultivation. Scarcely has a new Rose revealed its novel or superior qualities, than it becomes a small fortune in embryo to its fortunate possessor. His object is to realise as quickly as possible. With this object, growth is forced in every imaginable and unimaginable way. The result is a rapid increase of number, at the expense of vigour. The feverish impatience of the public for the possession of novelties adds fuel to the fire of the Trade's impatience to convert its embryo capital into solid cash. In this way, not a few of our new Roses have their constitutions enfeebled for years, if not permanently injured.

But admitting all this, the mortality of budded Roses doubtless arises largely from their being badly matched. By mounting a delicate or weakly Rose on a stout Brier, it has been thought that the Brier will impart of its strength to the Rose. Experience proves just the contrary. The Rose sends down its weakness into the Brier, and by a process of semi-starvation, brings about the disease and death of the roots. This last catastrophe is the more readily accomplished, as all the shoots and suckers of the Brier are strictly and incessantly removed, with the object of forcing the Brier-roots to feed the Rose only.

A good deal may be done to diminish the alarming death-rate among budded Roses by studying to match better, Roses and Briers in regard to each other. Weakly Briers should be budded with weakly or moderate-growing Roses, and *vice versa*. But more and better may be accomplished by using Roses for stocks. These have closer affinities than wild Briers and Roses, and as a matter of fact and experience, it will be found that there are fewer deaths and more robust health among Roses budded on Roses, than those budded on Briers.

Take, for example, such a stock as the Gloire de Dijon for Teas,—how seldom is a death met with on such stocks! Charles Lawson, Baronne Prevost, and Coupe de Hébé, again, form capital stocks for perpetual and summer Roses; and there is probably no better stock for Moss and Provence Roses than the old Cabbage. These are but examples of Rose stocks that may readily be raised from cuttings in quantity for budding or grafting purposes. The winter season is just the time to put them in. Most

of them are rooted almost as easily as gooseberry or currant shoots on a shady border, simply dug and trod-in, in the same manner.

It is not needful in the FLORIST to describe the manner of rooting Rose cuttings, nor their after-treatment, but my object here and now is to direct the attention of your many Rose-growing readers to the alarming mortality among worked Roses, and to suggest whether the use of Roses as stocks would not bring the death-rate—which sometimes reaches to twenty per cent. per annum—to something like reasonable dimensions,—say, five per cent. per annum.—D. T. FISH, *Hardwicke*.

THE BLACK CURRANT.

WE look to the hardy fruit-trees and fruit-bearing shrubs as our mainstay for a supply of table fruit; and in order that we may reap the greatest benefit from it that it is possible to yield, we preserve it in various ways, so as to have a supply all the year round. For this reason we dry apples as Norfolk Beaufins, and express cider, but in no case are we more concerned with our preserves than in the conserve of Black Currant jam or jelly. I need scarcely add that the finer the quality of the fruit, the better will be the conserve.

There are several varieties of this shrub, but for our present purpose it is needless to name them, as it is to the practical working that I am now to confine my remarks, and not to any botanical distinctions. Lancashire has long been justly famous for the culture of one species of *Ribes*—*R. Grossularia*, the common Gooseberry, and it was not long ago that I unearthed the greatest gooseberry-fancier in our locality, who by dint of good soil and no stint of manure, had tabled the heaviest specimen ever seen, either in or out of London; and full of enthusiasm—as well he might be—he was trying his hand upon the culture of exotics under glass, and I confidently anticipate great results from him in the new line. I need not say that Gooseberry-growing for exhibition is anything but a paying concern, whereas the culture of Black Currants is a thrifty business, and I never knew a season that they did not sell to advantage. I have named the Gooseberry-growing as a point which, if we attain with Black Currants, we shall not have been useless in our day and generation. The gooseberry-fancier grew his

berries after his own fashion, which was as follows:—He had a pig-sty of substantial build, and both sty and yard were covered in from the rain, so that he might be able to regulate the strength of the manure-water with which he watered his bushes; and after the fruit was formed and began to swell (but not before), he let his bushes live in clover, so that the foliage was large and of a dark-green colour. The soil used consisted of thin turves of loamy pasture, so as not to elog with the manure-water, on which depended the success of the experiment. Mr. Barnes, formerly of Bieton, differed from most growers in his management of manure-water, for he filtered it first before applying it to his plants, and said that though he liked strong coffee himself, he did not like the grounds; moreover, he held that the article might be strong, yet at the same time clear. Few, however, have had Mr. Barnes's training, for he did wonders with charcoal in his composts, and clear manure-water to stimulate the growth of most of the better kinds of plants.

Generally speaking, the Black Currant is neglected, and left to shift for itself in some quarter where it has been neither "dug about nor dunged" for years, in company with some venerable gooseberry-bushes that have survived the cutting process, and have found eyes in the old wood or adventitious buds that annually bear crops of small but useful fruit. I am obliged to name the Gooseberry all through the piece, because the Black Currant has never risen to the dignity of the Gooseberry, although I see no good reason why it should not be weighed against all comers at fruit shows all over the country. If I am rightly informed, our Laneashire fruit-grower had the honour of sending the great Gooseberry to the Royal table, and that it was graciously accepted.

Some thirty years ago it happened twice—but only twice during a long life—that I had more good manure than I knew what to do with, and it had to be buried, for manuring was no name for getting rid of it. The only chance was to trench a patch of ground cropped with starving Ribes of sorts, green, red, white, and black; and as it has often been remarked when one is short of space, there is generally room either upwards or downwards, ours was the downward line. The first year the crop was all but a failure, and although some new wood was made, there was nothing to spare in the way of pruning. There was, indeed, nothing

to attract attention the second year until the currants began to swell; and then, what with the summer sun above and the manure buried below, the crop surprised everybody, and clearly pointed to the Ribes tribe as scavengers where they can reach a body of filth partly deodorised by lying some time in deeply trenched dry earth. It is not only to the quantity of fruit produced by heavy manuring that we should look, for the quality made the fruit more saleable and of more value in price. It is a marvellous dispensation of Divine Providence that the very filth of towns is the marrow of manuring for field or garden; and cleanliness is inculcated as next to godliness. A small garden rightly managed will bury a great deal of manure, and sweet flowers and rich fruit will rise out of the graves we have made for the filth; but amateurs must bear in mind that all sorts of filth are not manure, and good manure may be rendered of no value by being exposed to drenching rains. Currants carrying heavy fleeces of foliage will require plenty of water, for, as a general rule, we never give them more than half-rations of either good food or drink, and although the plant be a common one, it requires care and study to get it to perfection. It is only here and there that some exhibitor makes up his collection of dishes of fruit by hitching in some of the Ribes family, just as some poor curate gets an invitation to dine with the squire or the rector to fill a vacant chair, for the sake of appearance and effect, and not for any merit, neither for "value received."—ALEX FORSYTH, *Salford*.

CHRYSANTHEMUM GOLD THREAD.



AMONGST a batch of Japanese Chrysanthemums, we find the above variety to be one of the most distinct and ornamental. As its name indicates, it is of a beautiful golden colour, and for supplying cut flowers it is very useful, coming in as it does, just when the general lot of Chrysanthemums is on the wane. It also has the merit of keeping a long time in a cut state; a bloom or two under my notice were quite fresh after being cut for nearly a fortnight. We have some plants with about thirty flowers on, and they have a very striking appearance. They are the produce of cuttings put in last February, and when struck were potted on into 8-in. pots, and plunged out in a bed of ashes about the middle of May. As soon as the pots were full of roots, we commenced giving them weak manure-water, continuing this until the blooms were open. One caution is necessary, namely, not to stop them (at all events in the North) after the end of June, at the latest.—H. J. CLAYTON, *Grimston*.

TWELVE MONTHS OF SUBURBAN GARDENING.



OUTSIDE, the Ice King holds all Nature in his grasp, and sensitive bronchial tubes warn me to avoid his contact. But wintry as is the aspect from the window of my apartment, my chamber is furnished with vivid pictures of departed beauties, and in the hope that it may be a help to some fellow-florist like myself, bound to contend with difficulty in the pursuit of the objects of his aspiration, I propose briefly to recount the work and the results of twelve months of suburban gardening.

Those of my readers familiar with the subscription attached to this paper will know that the chief objects of my devotion are Carnations and Picotees. But my admiration is not confined to those flowers, and we seek at all times to have the garden neat and clean, and as fully furnished as may be consistent with narrow means and limited opportunity. Premising, then, that the garden is a narrow strip, seven and a half yards wide and eighty in depth, is bounded on either side by a fence five and a half feet in height, so that we obtain very little more than half the light of the sun, even when that luminary is above the horizon, and is eastwards twenty yards of a busy railway, on which some five hundred trains per diem pass and repass, so that when favourable airs for growth prevail, west and south-west, we are exposed to all the dust and smoke of this enormous traffic, and thus have much difficulty to contend with, I commence at once with my relation.

Not myself only, but my family, are passionately fond of flowers, and all desire to have them as late in the autumn and early in the spring as possible. Two years since, an old friend, a practical florist, suggested that for an inconsiderable outlay a fine display of Crocuses, Narcissi, and Tulips could be obtained. So the experiment was made, but truth compels me to tell that the results have been anything but satisfactory, the second year less so than the first. Crocuses were fairly good, but lacking the advantage of free air, were wrecked grievously with the first windy day. Here, perhaps, I may remark, that wind is one of the most adverse influences the suburban florist has to encounter; and it is astonishing to note the mischief it will work, when once it has forced

its way inside these narrow enclosures. We make every effort, by clothing the boarded fences with foliage, to break the force of its blows, but season by season we have to deplore its evils, and learn by painful experience that nothing can compensate for a free, open situation, sheltered in the distance by clumps or lines of trees.

Narcissi and Tulips had a struggling existence, and we were well on in May before some double Wallflowers gave us their beautiful bloom and fragrance. Thenceforth, however, we had flowers, though in my experience, all out-door suburban gardening is a trial and a difficulty until midsummer is approached. Roses, even the very few that will survive—dear old Gloire and Souvenir de la Malmaison occupying the foremost place in this respect—giving no flowers until the summer growth is made. From the middle of May, however, we had flowers. The first seedling Carnation opened on the 12th. Then with early June came Pinks—seedlings and established varieties—and from June 20th to July 20th, Carnations and Picotees—seedlings and varieties long well known—were grand.

In July, *Lilium auratum*—though some bulbs of these dwindled away mysteriously just when the bloom appeared most promising—were very fine; and in August and early in September *Lilium speciosum rubrum*, *roseum*, and other varieties of that section, were superbly beautiful. In late July, and August also, my score of Roses were delightful, banishing all remembrance of the cruel nippings of the spring. But for town flowers, rich alike in fragrance and the highest order of beauty, after the Dianthus I know no tribe to equal the Lilioms. Grown in good, sound loam, with a fair admixture of leaf-mould and peat, in pots plunged around shrubs, they had a vigour and gave a life and variety to the foliage which was most delightful. *Gladiolus brechelegensis*, treated in a similar fashion, was very beautiful, and especially serviceable for bouquets. Then in late August and through September we had many fine blooms of Picotees from plants propagated from late pipings; and these, with Roses from Gloire and Souvenir, carried us onwards to the Chrysanthemums. But here I must confess to failure—the natural result of imperfect attention.


Of the specialities of the Carnation and Picotee bloom, I must be brief. The season was abnormal, wet exceedingly, and cold during May and up to the 20th of June. Then a wave of great heat, lasting to the 30th, rolled over us, and flashed out the earlier varieties of Carnations like magic. Many of these flowers were deficient in colour, but early July brought a change, and for some fifteen days we had a succession of blooms glorious beyond description. Curzon, Dreadnought, Mars, Mercury, Sir Joseph Paxton, and True Briton were severally in their finest array. Hitherto these varieties have been in the Scarlet Bizarre class—the most developed of all classes—almost alone worth growing; but unless I greatly err, some fine seedlings of Mr. Simonite's, and some bantlings I have had the good fortune to originate, will, so soon as sufficient stock for distribution can be obtained, largely add to this limited list. In Crimson, and Pink and Purple Bizarres—a far richer class numerically—of the older varieties, Black Diamond, Captain Stott, Colonel North, Eccentric Jack, Graceless Tom, John Harland, John Simonite, Lord Milton, Lord Raglan, J. D. Hextall, Marshal Ney, Rifleman, Unexpected, Warrior, Wm. Murray, Falconbridge, James Taylor, Purity, and Sarah Payne were each “beautiful exceedingly;” and of these classes I saw two or three seedlings, one in especial, sent to me by Mr. W. M. Hewitt, of Chesterfield, which will assuredly fill a place in the very front rank. In Purple Flakes, I had fine blooms of Dr. Foster, Florence Nightingale, Juno, James Douglas, Mayor of Nottingham, Premier, Sarah Payne (a sport), Squire Meynell, Squire Trow, and True Blue; in Scarlet Flakes, Annihilator, Clipper, Dan Godfrey, Holmes (a new variety), James Cheetham, John Bayley, and Sportsman; and in Rose Flakes—Crista-galli, James Merryweather, John Keet, Lovely Ann, Mrs. Dodwell, Mr. Findlay, Simonite (a variety not yet in circulation), Queen Boadicea, Rose of Stapleford, and Sibyl.

Picotees were finer in growth and fuller of colour than I had previously realised, in the dry arid air inseparable from my situation. Where all were so good, it seems almost invidious to select, but I am bound to say Zerlina, H.P., completely vindicated the claim made for it by its raiser, Mr. Lord, as being the best

Picotee in existence. In my judgment, seen as it was my good-fortune to see it, it never can and never will be surpassed. Other fine heavy Purple Edges were Leah, Alliance, Beauty of Cheltenham, John Delaforce, Medina, and Mrs. Summers; whilst in Light or Medium Edges, Ann Lord, Alice, Cynthia, Fanny, Jessie, Mary, Minnie, Mrs. Douglas, Nymph, and Silvia were surpassingly good.

Of heavy Red Edges, a class which, ordinarily is limited in number, there was an extraordinarily large and fine display; and the same remark applies to the beautiful class of Rose Edges. There were remarkably fine examples of Brunette, Countess of Wilton, Dr. Epps, J. B. Bryant, John Smith, Mrs. Dodwell, Master Norman, Mrs. Fuller, Morna, and Peeress; and in Light or Medium Edges, Thomas William, Rev. F. D. Horner, Wm. Summers, and Clara. In Rose and Scarlet Edges, Royal Visit (Abercrombie), much in the style of a fine Edith Dombrain, was, all points considered, probably the head of the class. Then Lady Louisa, by the same raiser; Edith Dombrain, Fanny Helen, Juliana, Mrs. Lord, Miss Lee, Miss Horner, and Obadiah—all heavy edges—were in fine character, and of great excellence respectively; and in Light and Medium Edges, Mrs. Nichol, Miss Williams, Miss Wood, with Teresa (Simonite), and Victoria, (Abercrombie)—the two latter new—were all that could be desired for breadth of petal, form, substance, delicacy, and definiteness of colour. Whoever possesses the varieties I have here enumerated, and gives them the attention needed, with the advantage of a well-sweetened soil, and a situation not worse than mine, will have a collection, in Northern phraseology, very “bad to beat,” and one that will surely reward the cultivator with a very wealth of beauty.—E. S. DODWELL, *Clapham*.

LAGERSTROEMIA INDICA.

 HIS fine old plant is very beautiful when in flower, but it is rarely one meets with a good specimen of it; and yet it is a plant of easy culture. It is a late summer or autumn-flowering plant, and when well grown, it is a very beautiful and striking object. It should be kept at rest during winter, in a cool part of the stove; the soil should then only be kept moist enough to keep the roots from perishing. Towards the end of March, or beginning of April, when it begins to grow, it should be placed in a warm part of the stove, where it will have plenty of light. When the shoots have made a little growth, the plant may be shifted into a larger pot, if it should require it, using a mixture of peat and loam, with a little silver-sand. When it begins to root into the fresh soil, it should

be watered freely. Towards the end of June, it will have made a good growth. The plant must still be kept in a good heat and have plenty of air, with all the light possible, to ripen the young shoots. After a few weeks' rest, a fresh growth is made, and these are the shoots which bear the flowers. Towards the middle or end of August, when it is covered with its panicles of beautiful purple flowers, it is a very striking object, and not surpassed by

many stove plants. I have been surprised that this plant is not more grown than it is as an exhibition plant. I can only recollect seeing it exhibited once, and then it was the most beautiful plant in the marquee. It is easily grown, it requires little attention during the winter months, and is not troubled much with insects. Moreover, when in flower, it is much more attractive than one-half the plants that are exhibited in August.—M. SAUL, *Stourton*.



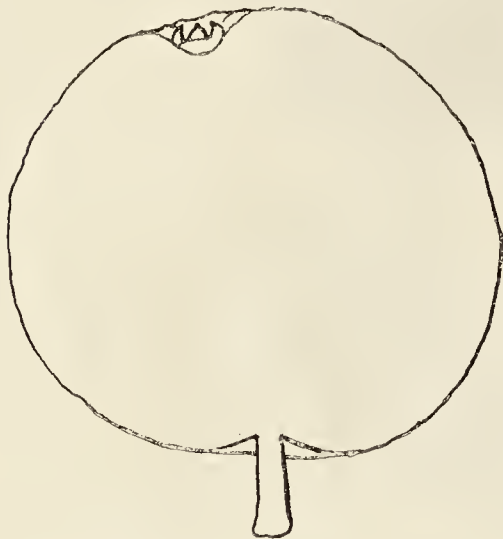
DAHLIA PARAGON.

ON the course of the past season, flowers of this single variety of *Dahlia* were exhibited at the metropolitan floral meetings, and attracted a good deal of notice for their singular beauty, apart from any consideration of merit attaching to the so-called double-flowered varieties of the florist. It appears to be an old sort, cultivated upwards of forty years since, and has fortunately been preserved, though not much known, since it was recognised by but very few of our present florists. Like the brilliant scarlet single, or radiate flowers of *D. coccinea* and *D. mexicana*, those of *D. Paragon* are exceedingly beautiful as border flowers, and for use in vases as cut flowers. The flowers, or rather the ray florets, of which

but one row is developed, forming what is called a "single" flower, are of a rich velvety maroon, edged with dark crimson, the effect of this colouring being very pleasing. This ray of dark-coloured florets surrounds the yellow disk, or eye, as it is called, which serves by contrast to light up and show off the deeper tints which encircle it. The plant appears to be a variety of the *Dahlia variabilis*, from which the florist's double varieties have sprung, and together with the other single-flowered sorts above alluded to, will be viewed from an altogether different stand-point from that whence the florists' varieties are surveyed. Mr. Cannell, of Swanley, obtained a First-class Certificate for the blooms exhibited, and we owe him our thanks for the use of the accompanying figure, which is somewhat reduced from the natural size.—T. MOORE.

THE À BEC PEACH.

PERMIT me to corroborate the remarks of "M. T." on the above Peach, in the *FLORIST AND POMOLOGIST* for 1878 (p. 181). We have a good-sized tree of it in our early peach-house, that annually gives us good crops of very fine fruit. It grows alongside the Royal George, and ripens several days before that well-known variety. In appearance it is one of the most handsome Peaches I ever saw, and the flavour is excellent. Those of your readers who are planting Peach-trees under glass will not regret putting in a tree of this not sufficiently well-known variety.—H. J. CLAYTON, *Grimston*.



THE GOGAR PIPPIN APPLE.

THIS Scotch apple was first known as a seedling at Gogar House, near Edinburgh, where I have seen the original tree. The fruit is of moderate size, and of a dark green colour, little changed by sunshine, and thus unlike many "rosy-cheeked apples." The figure shows a fruit of the usual size; it has a short stalk, a closed eye, and is marked by a few light dots or specks so common on apples, whether large or small. I have grown the Gogar Pippin for many years, and find it is a great bearer; the fruit keeps good till June, and even then retains the green colour, except that it shows slight tinges of russet on the exposed sides.

Like many late apples, the Gogar Pippin is very sour when first gathered, but in spring it becomes crisp and saccharine. The long-keeping kinds of apple retain their sourness through the

chemical change we call ripening being longer deferred in them. To explain the process is beyond my power; still, I may suggest that the changes wrought in the crude sap during its passage through the leaves of various texture, while both they and the fruit are approaching maturity, may have a hand in it. The process seems in some way to be connected with the art of making sun-pictures. It is even said that the Chinese took the hint of making these pictures from observing the colouring of fruit by means of the sun's rays, long before the art of photography was known in Europe.

The process of maturation in fruit has been considered the beginning of its decay, the pulp having then fulfilled its function of nourishing the seed. This may appear to be a low estimate of the value of the fruit, which we so highly esteem when ripe. Yet all such fruits are but swollen monstrosities in the eye of a botanist, and they become so by culture and the mixture of pollen—not seed, as sometimes written. The calyx or cup of the apple, which holds the blossoms, forms the rudiment of the fruit, with the seed embryos enclosed in its heart, and both fruit and seed are matured by the influence of the sun.—J. WIGHTON, *Cossey Park, Norwich*.

NEW PROPAGATING FRAME.

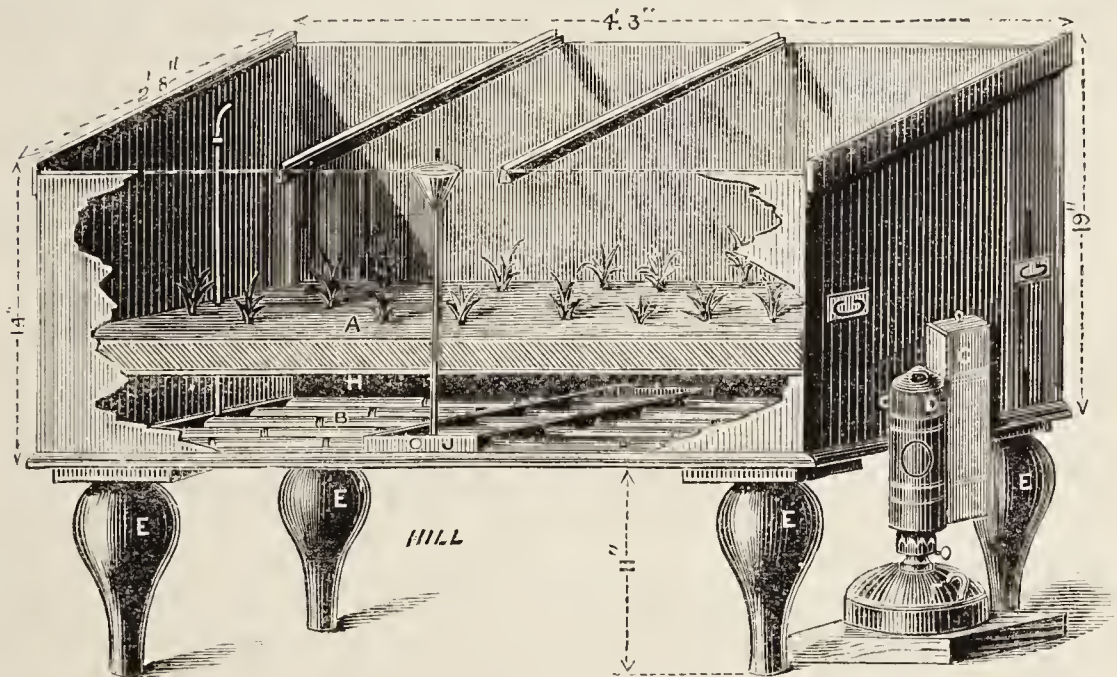
WE lately drew attention to Messrs. Heaps and Wheatley's Portable Hot-water Boilers, heated by their petroleum lamps, which appear to be in every way successful for small greenhouses. We now give an illustration of another application of these lamps, namely, to the heating of a Propagating Frame. Various contrivances of this sort have been before the public, and they are found exceedingly useful by amateur cultivators, who have not a regular propagating house at their disposal. Such frames are perfectly well adapted for raising seeds or striking cuttings, or even for the permanent cultivation of any plants which can be accommodated in the space they afford. The frame here illustrated seems to be one of those which may be safely adopted, since it is one in which the heating can be kept up with little trouble and expense.

The frame is made in three sizes, the largest, represented by the annexed sectional figure, being 4 ft. 3 in. long, 2 ft. 8 in. wide, 1 ft. 7 in. deep at back, and 1 ft. 2 in. deep in front. In the figure are shown:—A bed of soil or of plunging material (A) for striking cuttings, raising seeds, &c., both seeds and cuttings being most conveniently managed if placed in pots; a series

of hot-water pipes (B), for supplying bottom-heat; a cistern, for supply of water to apparatus (C); the boiler (D), which is made of copper, or copper and zinc; movable legs or supports (E); an oil cistern, for lamp (F); air-pipe (reference not inserted); a perforated tray (H); the feed-pipe (I) for the vapourising tray (J), through which the hot-water pipes pass. By keeping this tray filled with water, a genial, moist heat will be kept up, which will find its way through the plunge-bed to the atmosphere above, or if not, could be easily conducted thither, by leav-

ing a small aperture or two communicating with the space above the bed.

In such a case as this, propagation may be very successfully and rapidly carried on. The case should be set in some light place, where it may be protected from the outer atmosphere, which would, in severe weather, be more than the lamp could contend with. A snug corner of a greenhouse would be a very suitable position for it. Those who have not the advantage of a hot-house or hot propagating pit, would find one or more of these frames exceedingly useful, and much more manageable than a common hotbed.—T. MOORE.



HEAT'S AND WHEATLEY'S PROPAGATING FRAME.

ON FILLING ICE-HOUSES.

THE Ice-house is an important adjunct to a gentleman's establishment, and the filling of it generally falls to the lot of the gardener. Now, as the season has again come round when we may expect suitable weather for the operation, I wish to say a few words on the subject. We often hear old people talking in praise of the "good old days," as though the times had degenerated; and I think the seasons are certainly not so favourable for Ice-house-filling as they formerly were, though I am bound to admit, for the sake of gardening, and in view of the general depression of trade, that gardeners do not wish to see Father Thames again frozen over.


The best time to commence filling the Ice-house is after a few days' hard frost, when the ice has become of a considerable thickness. At the most convenient side of the pond for carting

away the ice, a substantial platform, composed of stout planks, should be laid, and on this the ice should be thrown out, so that it can be shovelled up in a clean state. When, as I have sometimes seen, the ice is drawn out of a pond on all sides, and is trampled about where the cart-wheels have created a slough of despond, it becomes soiled by being mixed up with a considerable quantity of mud. Such ice, when required for use, is found to be in a filthy state, so that both the butler and M. le Chef are glad when there is no frost, so that they may obtain a supply of "Wenham" from the dealer, in a cleaner condition. Moreover, when there is a quantity of dirt thus mixed with the ice, the drain is likely to get choked up, and ice will not keep well if the thawed water cannot freely escape [though air must not be permitted ingress through the drain]. Ice should always be broken

up as finely as possible, as it then sets more firmly together, and keeps longer than if stored in a lumpy state. The work should be done with method, and as much despatch as possible, as if a thaw sets in, and the house cannot be filled at once, waste is likely to arise from the house being reopened to fill it up. After the house is filled, a temporary supply may be stacked behind a north wall or in some other shady place, and covered with saw-dust and boughs, to keep the air from it. This will keep for two months at least, and come in well for present use, so as to avoid opening the house for as long a time as possible. —GEO. POTTS, JUN.

MARKET PLANTS.—X.

LILIUM THUNBERGIANUM AND FAIRY ROSES.

 HE orange-tinted varieties of *Lilium Thunbergianum* are grown by some cultivators for market purposes, and find a ready sale. This and *Lilium longiflorum* are the two best for pot-culture, because they always appear to do so well, and produce good heads of bloom on short stems. There are newer and choicer types, that do as well in pots as the commoner forms named; but they are not plentiful, and the market-grower has to do with subjects that are plentiful, and that can be sold at a moderate but remunerative price.

The market-growers of Lilies get their roots over from abroad in autumn, and they are potted into 6-in. pots when received, and stood out-of-doors for the winter, covering them with spent hops and manure, or similar materials. They begin to grow in early spring, and are then put into a house where there is some warmth, and brought on gradually; the later ones come on of themselves, and need to be simply protected from bad weather, to keep the flowers unharmed.

I was much amused at the novel method by which the flowering plants of Lilies are taken to market. If they were stood together in the bottom of a cart or van, or were packed in boxes, the flowers would whip against each other, and get much injured. The plants are laid down on their sides in shallow boxes, with the heads of bloom reaching beyond the ends of the boxes, and tied in a secure position. These boxes are placed on the roof of a light van, and are conveyed to town without sustaining any injury.


THE FAIRY ROSE (*Rosa Lawrenceana*).—How skilfully and well these pretty plants of the Fairy Rose are grown, and one does not wonder they command such a ready sale! How great a demand there is for them is shown by the fact that Messrs. J. and J. Hayes, of Edmonton, alone grow every season from seven to eight thousand plants—a pretty astonishing number.

The plants are raised from cuttings, taken from stock plants, put into heat early in the year. The great bulk of cuttings are put in during April, when they have made a growth of about four inches. They are put into broad-mouthed pots, filled with a light sandy soil, and well drained, from two dozen to three dozen cuttings in a pot, and placed in bottom-heat. When they are rooted, they are potted off singly into thumb-pots, and grown on quickly in heat, then shifted into second-size 60-pots; or if room can be had, they are potted at once into 48 or 5-in. pots, the size in which they are marketed. Those who frequent Covent Garden Market will know something of these nice, clean, healthy bush-like plants, laden with pretty flowers; they are eagerly bought up by those who love a rose. It is the free growth the plants are indulged with—no cheek and no pause—that makes such charming bushes of them; green-fly is never allowed to congregate on them, and they have every attention that is bestowed on plants in the market-growing establishments.

It is not difficult to propagate the Fairy Rose. Some people suppose that it is, but an experienced hand will make a plant of any shoot, and a dozen good plants, bursting with shoots, will soon originate a thousand others.

In his *Amateur's Rose Book*, Mr. Shirley Hibberd remarks that as “thousands are sold, there must be thousands of purchasers, and we may reasonably guess that nine-tenths of the whole number try to keep their roses, and hope to see them flower again. To how many of them all is it vouchsafed to have a full gratification of this honourable desire? We can only answer the question vaguely, as another guess, that not more than one per cent. of the whole number sees the flowers of the Fairy Rose a second time, that is to say, in another and distinct season of bloom. These roses are easy enough to grow, if you go the right way about it, and in that respect they agree with all other known plants. But they differ from many other subjects of our care in this respect, that if we make a mistake at any point, or give way to any degree of carelessness, the Fairy Roses vanish; or if they deign to live, it is for the entertainment of aphids, aecurus, or mildew, perhaps for all three; and while entertaining these new and disreputable acquaintances, they ignore the feelings of their vexed possessor.”—R. DEAN, *Ealing*.

RIVERS' VICTORIA NECTARINE.

 VERY thing from Mr. Radclyffe's pen adds to the interest of the *FLORIST*, and I have read with both instruction and gratification his communication on “The Fruit Season of 1878.” But among his list of

Nectarines I look in vain for *Rivers' Victoria*. [This variety was figured in our volume for 1863, Plate 228.] As Mr. Turner classes *his* under the name as an *early* fruit, there must be two. *Rivers'* is so excellent, that a brief description seems almost to claim a space for its recommendation.

It is a profuse bloomer, and very quickly sets every flower. It requires two radical thinnings, and grows its fruit to a large size. The crop ripens gradually, and from its substantial skin will not only keep some days after gathering, but defies the earwigs.

It is the offspring of the Persian Stanwick and the Violette Hâtive, possessing decidedly the unique flavour of the former. For three successive seasons I have gathered the last *Victoria* on 29th September. It will not attain perfection even in the orchard-house, but on the wall, an elevation which is only the fair award of its merits.—G. D., *Southampton*.

GLADIOLUS BRECHLEYENSIS.

IT may interest those of your readers who watch the changes that take place in the value of the materials of horticulture and floriculture, when I tell them that the first flower-bed which I planted of this splendid variety of *Gladiolus* cost 5s. each bulb; and it was well worth the money, for when the flowers appeared they left nothing to be desired. The blaze could not, indeed, be surpassed by the best bedding-plant known, and the fact of its coming late gave it additional value. In order to make the most of these costly bulbs, a circular bed was got ready for them, with a slender evergreen bush in the centre, to act as back to the nosegay, for the narrow foliage of the *Gladiolus* required backing up to prevent seeing through the clump, and whatever blaze was exposed to view in this way, there was always something concealed which gave a charm to the otherwise stiff lines. This grand old bulb is now within the reach of any one having a patch of flower-garden to grow it in, for it has been sold by auction in Manchester at ten for a shilling, the price of onions.

The second season that I grew this flower I was unsuccessful with it, and your readers may profit as much by my warning them of the danger of frost, as by the tale of my success, for in the deceitful climate of Devon, where the

experiment was tried, more than half of these costly bulbs were frosted by a late spring frost, intense enough to kill them and some others nearly allied to them. It is therefore wise to pot the bulbs first, and keep them under cover until danger from frost is over. This saves from too deep planting, and may refer to other members of the same family who are risky when bedded out too early. The cheapness of *Gladiolus brechleyensis*, however, now enables one to risk them boldly, and by so doing, they have gone ahead surprisingly, as may be inferred from the relative cost of five shillings a bulb, and their price at the auctioneer's hammer of ten for a shilling; even setting the auctioneer's price aside, the bulbs may be had from the regular trade at a very cheap rate, and whoever invests in these, and gives them a fair trial, will not be disappointed. The cut spikes are brought to market in Manchester, and sell readily in the season, and they retain their freshness longer than most cut-flowers. In the dressing and adornment of churches they cannot be surpassed.—ALEX. FORSYTH, *Salford*.

VILLA GARDENING.

January.

AS we write, out-door gardening operations are almost in a state of suspense. The frost has literally locked-up the earth; it is covered with a mantle of snow, and the darkness in the air denotes there is more to come. It is well that it is so during winter. Frost and snow are beneficial influences in the economy of Nature, and if they subject gardeners to present inconvenience, the ultimate benefits flowing from them will be written large on the face of the earth by-and-by. If December and January's days are brief and chill, they will, ere long, when east wind and frost are safely gone, be followed by the mild zephyr and balmy rain,—sure forerunners of the summer coming serenely on.

Greenhouse.—Air should be given here on all favourable occasions, but cold draughts must be avoided. Want of attention in this particular is the cause of death in many plants. When the weather is too frosty or too wet for out-door gardening operations, advantage can be taken of the opportunity to get the plants cleaned, especially those with thick leaves on which dirt gathers, such as *Oranges*, *Camellias*, *Myrtles*, *Oleanders*, and other evergreen plants, which are much improved by the application of a sponge and clean, tepid water. During

winter also, dust will settle on the leaves of such hairy or woolly-leaved plants as *Pelargoniums*, *Calceolarias*, *Cinerarias*, *Primulas*, &c., and it can be removed by means of a soft brush. About the middle of the month it may be found necessary to repot some of the forwardest *Calceolarias* and *Cinerarias* that are getting root-bound, for it is of great advantage to keep these moving on in an uninterrupted growth, so that they may give some early flowers. They require to be kept gently growing, and be near the glass. Specimen *Pelargoniums* intended for early blooming will be the better for having the outer shoots tied out a little, to lay the foundation for a good plant, but it must be done with great care, as the shoots are easily broken off. There are many other little attentions that should be given, and when there is little in the outer garden to interest, the villa gardener may turn his attention to his pots under glass.

Cold Frame.—This should now be occupied by many things for use in early spring and summer, not tender things, as a matter of course; but with care, half-hardy plants can be wintered with safety. A few *Christmas Roses* in pots should form a part of the occupants of the frame, as they will soon be throwing up their flowers, and they are doubly welcome now. *Primulas*, *Polyanthus*, *Auriculas*, *Aquilegias*, *Rockets*, *Cloves*, *Carnations*, and *Picotees*, *Pansies*, *Anemones*, *Scillas*, and many other things are proper occupants of such a frame now. If the weather sets in very severe—and the weather prophets are foretelling an unusually severe winter—it will be a good plan to plunge the pots in a bed of dry cinder-ashes, or cocoa-nut fibre, as the roots of pot-plants come near to the sides of the pots, and are liable to be injured by frost. But very little water will be required; in fact, the drier the soil is kept about the roots of the plants the better, while frost is about. By means of a judicious selection of subjects, the cold frame can be made to yield something to flower during the next three months.

Flower-Garden.—What can be done here depends on the state of the weather; if it be dry and mild, necessary alterations can be made, and any planting done. Beds that remain unoccupied should be dug deeply and thrown up roughly, for the wintry elements to act on the soil. This is a good time of the year to change the soil of beds and borders. Any plants of a choice character, even though they rank as hardy, such as *Roses*, *Clematis*, &c., should have some protection when hard frost sets in; it makes them secure against possible injury. Lawns should be rolled and paths swept and made neat. A tidy garden is as enjoyable in winter as in summer.

Kitchen-Garden.—Rough-dig, or trench, and ridge-up all vacant ground, that the mellowing

influences of winter may act on the soil beneficially. Especially is it to be commended in the case of ground intended for crops of early *Beans* and *Peas*, for sowing-time will soon come round again. *Lettuce* plants may have a little litter thrown over them in severe weather, but it should be sprinkled loosely about them. Any dung or vegetable refuse to be got on to the ground for digging-in should be conveyed there when the weather is frosty, and the paths firm and dry.

Fruit-Garden.—Any newly-planted fruit-trees should be mulched with some loose, light, stable-dung, as the soil being loose and open allows the frost to penetrate to the roots, which is always injurious to them. It will soon be time to nail hardy fruit-trees on walls, but *Peach* and *Apricot*-trees are best left till the end of February. Pyramid and bush fruit-trees that require thinning-out can be gone over for this purpose, but the final pruning can be left for the present. This is a good time to root-prune any trees of a redundant growth, to get them into bearing, taking out the soil on one side a foot or more from the tree, and seeking to sever some of the leading roots. It is the severe top-pruning to which bush and pyramid trees are put that keeps them infertile, as they grow vigorously in summer, and do not form fruiting spurs.—SUBURBANUS.

GARDEN GOSSIP.

THE last few meetings of the ROYAL HORTICULTURAL SOCIETY have been especially remarkable for the displays of Hardy Shrubs which have been made. Both at the October and November meetings, the Messrs. Veitch and Sons, of Chelsea, exhibited a large collection, consisting of about 100 species and varieties of hardy evergreen shrubs, each sort being grouped so as to fill a round basket of sufficient diameter to represent the effect of a similar group when bedded out for the winter decoration of the flower-garden. The object was to show the rich variety of materials available for this purpose, which is, so to speak, annually allowed to run to waste, because not sought after for this, one of its most precious uses—at least, not at all to the extent it should be. On December 17 a display of hardy shrubs was made by Messrs. C. Lee and Son, of Hammersmith, of a somewhat different character, but serving to show another phase under which these evergreen hardy subjects could be turned to good account. This group, consisting of an intermixture of spiry with low-growing plants, varied by the introduction of dwarf standard Ivies, which, with their brightly variegated foliage, struck us as being very effective. Both displays were in the highest degree meritorious.

—THE NATIONAL ROSE SOCIETY held its annual meeting on December 12, in the rooms occupied by the Horticultural Club, Arundel Street, Strand, the Hon. and Rev. J. T. Boscawen in the chair. The treasurer's account, showing a balance in hand of £25 16s. 10d., was read, passed, and ordered to be printed, and the thanks of the meeting were given to Mr. W. Scott, the hon.

treasurer, for the able manner in which he had fulfilled the duties of his office. The dates recommended by the general committee for the exhibitions of 1879 were agreed to, viz., the Crystal Palace on June 28, and Manchester on July 12. It was also determined that exhibitors who are not members of the Society must pay an entrance-fee of 5s.; that the highest number of Roses which amateurs should be required to exhibit should for this year be thirty-six; and (this was decided at the dinner in the evening) that a dice should be made and medals offered from year to year at the various Rose-shows in the kingdom, as funds would permit. A subscription was entered into for this purpose, and was liberally responded to.

— **MR. GILBERT**, of Burghley, showed at the last meeting at Kensington some very pretty double-flowered varieties of *Primula sinensis*, which have passed into the hands of Messrs. Osborn and Sons, of Fulham, by whom they will probably be sent out towards the end of the ensuing summer. There are four of them, namely: — *Mrs. A. F. Barron*, a pretty blush-pink; *Princess*, pure white ground, occasionally tinted with pale pink; *White Lady*, a near approach to pure white, but occasionally having the flowers slightly spotted or suffused with delicate pink; and *Marchioness of Exeter*, white ground tinted with pink, some flowers striped or blotched with a deeper colour. The great characteristic of these plants is their excellent habit. They are vigorous in growth, with fine healthy foliage, and produce immense clusters of their lovely and very double flowers. Another variety from the same source has been recently certificated under the name of the *Earl of Beaconsfield*; it is of a rosy-carmine colour, very large and double, and altogether a very fine acquisition in this useful and showy group of plants.

— **THE** Committee of the International Potato Exhibition has awarded two first-class certificates to NEW POTATOS. One of these selected varieties is the *Radstock Beauty*, a coloured round, inclining to pebble-shape, even and somewhat angular, rarely attaining to large size; the skin tawny-white, smooth, and silky; eyes few, but conspicuous, the side-eyes being of a rosy-purple colour, with arched brows of the same tint distinctly defined; eyes of the crown or nose end clustered in a patch of a somewhat darker shade. The growth is moderate, the produce mostly of smallish ware size, plentiful, and clean. The flesh fine in texture, mealy, dry, and delicately flavoured. The other is the *Woodstock Kidney*, a white kidney, of oblong shape, extremely even and smooth, the skin tawny-white, silky; eyes few and inconspicuous, set level with the general surface in a small cluster of dots at the crown or nose end. The growth is moderate and compact, the tubers plentifully produced, mostly of middling ware size, and in the very least degree affected by disease. The flesh is yellowish, fine in texture, and of the most delicate flavour. This is, all points considered, one of the finest varieties known.

— **THE** GARDENERS' YEAR-BOOK AND ALMANACK for 1879, by Dr. Hogg, has just been issued for the twentieth year. This fact alone is a sufficient indication of its usefulness. It appears to be carried out on the old lines, the select lists and descriptions of novelties being especially valuable. Amongst the new subjects introduced this year is a treatise on home-made wines; and

there are many useful garden receipts, and the usual tabular matter for ready reference.

— **IN** SUTTON'S AMATEUR'S GUIDE for 1879 we have much more than a seed catalogue, though that is also comprised within its pages. There is a year's work in the garden, and cultural directions for growing the principal vegetables and flowers, all of a succinct and reliable character, and the whole is profusely illustrated, the coloured plates being very well got up. The amateur gardener may consult it with advantage and with confidence.

— **WE** have before us a specimen of ALPINE PLANTS, painted from nature by Joseph Seboth, with descriptive text by F. Graf (London: W. Swan Sonnenschein), of which we can say that the plant selected is very faithfully rendered. It appears to be intended to issue a volume of one hundred plates, a second volume will follow, and a third and fourth if the work is sufficiently supported by the public.

— **IN** LÆLIA ANCEPS ALBA we have one of the most charming of new Orchids, its peculiar characteristic being the purity of its white flowers, the texture of which may be compared to that of *Lapageria alba*, stained only by a dash of yellow on the disk of the lip. The ovate ribbed pseudobulbs are shorter and paler than those of the type; the oblong leaf is thick and firm in texture, and the flowers large and remarkably spread out, measuring across the expanded petals four inches. Mr. Bull has just imported it from Mexico, from a locality upwards of 8,000 feet above the sea, where the cold is intense, icicles two to three feet long being found on the neighbouring pine-trees. The plant grows mostly on precipitous rocks.

— **TO** have BOUVARDIAS for winter blooming, strike the cuttings in spring: plant out-of-doors during summer in light rich soil, kept well supplied with water, and mulched; lift and pot in September, setting them in a cold frame, shaded from bright sunshine for a week or two, and then place them in a greenhouse where they will have plenty of light. All Bouvardias may be successfully grown in this way.

— **LAST** summer a beautiful SCARLET VARIEGATED MAPLE was exhibited by Sir Philip Egerton, Bart., at South Kensington. It is a sport first discovered by Messrs. Hook and Yeates, nurserymen of Chester, who have succeeded in fixing it by grafting, and are now in possession of a small stock of this valuable addition to our decorative trees. When the young leaves first expand in the month of April, the colour is said to be of the most brilliant description. If the variegation remains constant, and can be freely propagated, this will become an effective tree in villa grounds and park scenery.

— **ON** the subject of WATERING VINE BORDERS, Mr. Thomson, of Drumlanrig, writing to the *Journal of Horticulture*, says:—I feel convinced that in districts where the rainfall does not exceed 36 in. per annum, vines rarely ever get as much water at the root as is good for them, and have far too much supplied to the atmosphere of the vineries by sprinklings. Where the drainage of vine borders and the soil are as they

ought to be, I have never known vines suffer from too much water in their growing season, and have known them get 6 ft. of rain in the year, besides artificial waterings in inside borders amounting to even more than 6 ft.

— THE well-known HODGINS' HOLLY (*Ilex Aquifolium Hodginsii*) is the best of hollies for town gardens, and a very fine holly everywhere. Usually when hollies are planted in smoky and confined places, the common typical form of *I. Aquifolium* is chosen, and it does very well; but Hodgins's beats it in every way. It is more noble in leafage, richer in colour, denser in habit, and more rapid in growth. "I am really surprised at the progress of this variety in my collection, which, being extensive, affords me abundant opportunity for comparison." So says a writer in the *Gardener's Magazine*, and we quite agree with him.

— THE AMERICAN CRANBERRY (*Oxycoccus macrocarpus*) is grown in the gardens at Petworth, in a shallow tank, where it bears bushels of the most delicious berries. The "tank" is from three to four feet deep, and not water-tight. It has a layer of rubble at bottom, to hold superfluous moisture; and then two feet of sandy peat, in which the plants were set some years since. This shallow cranberry-tank is 36 ft. across, and carries a crop of several bushels of fruit. The plants are submerged in water several times during summer, and should always be flooded to set the blossom about the middle of June. There is no better vehicle for cream and powdered sugar than a cranberry tart. Words will not describe the excellence of this berry, or its pleasant, brisk flavour.

— THE NEW CANADIAN POPLAR (*Populus canadensis nova*), by reason of its marvellous rapidity of growth and other good qualities, is calculated to grow rapidly into favour for town planting, and where shelter or immediate effect is an object. It is, perhaps, not too much to say that it is one of the best and most useful hardy deciduous trees we have. It is the most rapid-growing of all our hardy trees, sometimes, in a season, making ten feet growth, well furnished with branches. It may be seen in luxuriant health in the plantations on the Thames Embankment at Chelsea. From the treatment to which it has been there subjected, it is evident that it will bear any amount of pruning; so that it may be kept to any size or form required. It is probably the best tree we have for planting in the smoky towns of the manufacturing districts in the north of England. Its nearest affinity is with the Black Italian Poplar; and in fact, it may be regarded as a very much improved form of that variety, possessing greater vigour of growth, as well as larger leaves, which are retained fresh and green till a later period of the season. It is, in fact, in every way an improvement on that well-known and useful sort, and as a screen tree has no rival.

— THE beautiful BELLADONNA LILY is liable to failure from two causes, as noted by "J. S." in the *Gardeners' Chronicle*. The one consists in not giving the plant sufficient water during summer to bring about a full and healthy leaf development; the other in allowing it to become frost-bitten during the winter. The tendency of this Lily is for the bulbs to become crowded, so that they push each other near the surface, and if not protected, all the uppermost, which are the

strongest and best ripened, get their crowns injured and perish. To prevent this, a few inches of half-decomposed leaves should be put over the border as soon as they have done flowering, which answers the double purpose of enriching the soil and rendering them safe for the winter. Owing to the very early growth they make, the foliage is liable to get cut in the spring, but a mat thrown over them at night, or a few evergreen branches stuck in, till frosts are over, form a sufficient protection at that season.

— IN reference to STORING FRUIT, a correspondent of the *Garden* recommends as very effectual, the use of Malt-dust. The plan recommended, and proved by satisfactory results, is to pack the fruit in malt-dust, which is easily to be obtained from any brewery. They may be placed in ordinary flour-barrels, and stored away in a dry place.

— THE dish of SUTTON'S WOODSTOCK KIDNEY POTATO, which was recently exhibited at South Kensington, after being cooked and tasted, was awarded a First-class Certificate. Woodstock Kidney was raised by Mr. Fenn, and has the high quality peculiar to his varieties. It is an oval-shaped kidney, silvery-white, with netted skin, a model in shape, pleasing in texture, an excellent cropper, the shaws somewhat less robust than those of International. In quality it is all that can be desired.

— THE following are ornamental LARGE-LEAVED OAKS, according to the *Deutsche Gärtner-Zeitung*:—1, *Quercus conferta* (Kit.), the *Q. pannonica* of gardens, strongly recommended on account of the beauty of its foliage. 2, *Q. Daimio* (Hort.), a Japanese species only known in a young state, the foliage of young healthy trees being usually much larger than in large trees. 3, *Q. macranthera* (F. et M.), native of the Caucasus and North Persia, attaining a height of 50 to 70 feet, and having broadly obovate leaves 8 inches long. 4, *Q. macrocarpa* (Michx.), a North-American species, vigorous trees of which have leaves a foot or more long, by 5 in. or 6 in. broad. 5, *Q. oliveformis Hampteri* (Hort.), a garden variety, with much larger leaves than the introduced type. 6, *Q. rubra* (L.) 7, *Q. tinctoria* (Willd.) To which list *Q. alba* might be added.

— THE WEEPING BLACK BIGARREAU CHERRY, as grown by Messrs. C. Lee and Son, of Hammersmith, bears fruit of large size and excellent flavour, ripening a fortnight earlier than the Bigarreau. The habit of the tree is weeping, so that it is both ornamental and useful. It was, we are informed, introduced from the Continent, where it is still a novelty, and bears the names *Bigarreau Pleureur*, and *Bigarreau Noir Monstrueux Pleureur*.

— THE TUBEROUS-ROOTED BEGONIAS GROWN AS BASKET PLANTS form very interesting objects, for in this way their large, brilliantly-coloured blossoms, which are naturally of a drooping character, can be seen to advantage, and if grown in good soil and kept well supplied with water in a moderately cool, dry house, they will produce a charming display for months in succession. We saw some of them thus grown last summer, by Messrs. Laing and Co., at the Stanstead Park Nurseries, and they were very effective.




Rose H.P. Countess of Rosebery.

Miss E.-Regel del.

P. De Pannemaker, Chromolith. (Gand) Belgique

ROSE COUNTESS OF ROSEBERY.

[PLATE 483.]

 HIS fine new Hybrid Perpetual Rose was raised from seed, sown in 1870, by Mr. R. B. Postans, of Brentwood. We congratulate Mr. Postans upon his good-fortune in obtaining such a valuable addition to our already largely extended list of Hybrid Perpetuals. This Rose, together with two others of Mr. Postans' raising, Duchess of Bedford and May Quennell, are a trio which any rosarian may be proud to claim.

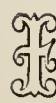
COUNTESS OF ROSEBERY was first exhibited at a meeting of the Royal Horticultural Society, South Kensington, on June 18th, 1878, and was awarded a First-class Certificate. It received a similar award at the hands of the Royal Botanic Society of London, and also at the Manchester Show of the National Rose Society. The *Gardeners' Chronicle*, in its report of one of these shows, says of it:—"The flowers are very perfect in shape, the petals beautifully cupped, as shown; the colour is that

of Étienne Levet, but it is a better-shaped flower." It was also exhibited at the Alexandra Palace Rose Show last June, where, in company with its companion-rose, Duchess of Bedford, it almost created a sensation, and was admitted to be one of the most promising new varieties of recent years.

The flowers are brilliant carmine-rose, large and full, and of finely-cupped form. It is a very vigorous-growing variety, and possesses a strong and hardy constitution. The flowers are produced freely in autumn. The foliage is handsome, the wood smooth, the habit good. It may be justly described as combining flowers of the quality of and nearly the same colour as those of Étienne Levet, but with the free and excellent habit and growth of Madame Victor Verdier.

This rose is at present in the hands of Messrs. William Paul and Son, of the Waltham Cross Nurseries, by whom it will be distributed shortly.—A. W. P.

HINTS ON ORCHARD-HOUSE CULTURE.

 T is unlikely that the cultivation of Fruit-trees in pots, in these useful structures, will increase in popularity, owing to the close attention the trees require during the growing season; and yet where amateurs can find time to give personal attention to them, it is most interesting as well as instructive to note the growth and development of bud into blossom and leaf, to watch and aid the setting of the blossoms, and ultimately to realise the full fruition of one's labours in the handsome and luscious fruits.

It is needless here to go into any lengthened details of orchard-house culture, but a few seasonable remarks may be useful. The orchard-house is generally a glass structure of any convenient shape, constructed for its adaptability to grow fruits well, and especially in districts where the climate is not suitable, or in places where the character of the soil is not well adapted to the culture of stone fruits. Whatever may be the form of the house—and it is worthy of note that trees will do well in the ridge-and-furrow, span-roof, half-span, or lean-to—the internal arrangements are of the simplest. The most primitive of any that

have come under my observation, has consisted simply in a shallow trench dug in the centre of the house, the soil being thrown out right and left, and made level. Very few persons would be content with this style, while a few shillings expended on gravel and edging-tiles will form neat borders and paths, always pleasant to look upon. A narrow house may have a path down the centre, with a border on each side; while one over 18 feet wide should have a bed in the centre, with a narrow border all round the sides. The paths should be about 2 ft. 6 in. wide, and the borders for the trees may be covered a few inches deep with cocoa-nut fibre refuse. The roots should not be allowed to grow out at the bottom of the pots. I place the pots on bricks, or raise them on inverted pots, to prevent this, and also to keep out worms.

If the pot-trees have been wintered out-of-doors, they ought to be taken into the house by the first week in February, and they will require but little attention until the blossoms are expanded. See that the trees are well watered at the roots, without giving them too much. Air freely, but keep the frost out. It

will always pay to have a heating apparatus. No doubt good fruit has been grown in successive seasons without any such aid, but in some cases there has been a failure of the crops because of the unfavourable character of the weather when the trees have been in blossom. The effect of frost is not felt very much if there is plenty of sunshine by day. It is during dull cold weather, with a low temperature at night as well as by day, that artificial heat is required. When the trees are in flower, it is as well to shake them gently twice a day, to distribute the pollen. In this way, a good "set" is generally secured.

Where the natural soil of the garden is unsuitable, it is very desirable to grow the trees in pots, as a small quantity of imported soil serves for each tree. Good clayey loam from the chalk is the best soil for stone-fruits, and it answers as well for Pears; a fourth part of good rotten manure ought to be mixed with it, and in potting, the soil should be well compressed with a wooden hammer.

Unless for the sake of variety, it is not desirable to grow many sorts of fruit-trees. Six good Peaches are:—*Hale's Early*, *Early York*, *Royal George*, *Grosse Mignonne*, *Bellegarde*, and *Desse Tardive*. Nectarines:—*Lord Napier*, *Murrey*, *Pine-Apple*, *Violette Hâtive*, and *Victoria*. A few useful Pears are:—*Beurré d'Amanlis*, *Beurré Diel*, *Louise Bonne of Jersey*, *Souvenir du Congrès*, *Marie Louise*, and *Williams' Bon Chretien*.—J. DOUGLAS, *Loxford Hall, Ilford*.

PLUMS AS GROUND CORDONS.

IT has somewhat surprised me to find these so little used. They have done remarkably well with us on a narrow border in front of an apricot wall. A wire is run along about 25 in. from the ground, and 4 ft. from the wall; this is furnished with a good collection of dessert plums, planted at four feet apart. Most of these are confined to a single stem, though a few are trained both ways, and form double cordons. All are kept tolerably close to the main stem by summer pinching, and pretty close winter or spring spurring. The soil is a sound loam, and the trees have no special feeding or ground culture, further than being kept clear of weeds, and the application of a slight surface mulch in very hot, dry weather.

As soon as the trees flower in the spring, a few spruce branches, or laurel or box boughs, are tied or placed over them. These, with the lateness of the blooming season of Cordon Plums, have hitherto protected them from spring frosts, and contrary to our expectations at planting, though we have had many losses of crops on the walls, we have not once failed of plums on our Cordons. On the contrary, the trees have generally got a double or treble crop, and towards the middle of June large

quantities have been thinned off. Neither do the Cordons suffer from aphides, as plums on walls mostly do. During the years we have grown Cordons, they have not needed dressing with tobacco-water or other pest-destroying mixtures, and the trees have continued, with very few exceptions, in good health on the restrictive system. The fruit is generally fine, and a fortnight to three weeks later on the cordons than from walls. This is a great advantage, in prolonging the Plum season in gardens like these in which standard plums seem impracticable, from the ravages of birds, and also partly from peculiarities of position and climate. A second and later crop of such fine Plums as the *Gages*, *Jefferson*, *Golden Drop*, and *Impératrice* is invaluable for dessert.

Most seasons, the Cordon Plums are quite equal in quality and almost as large in size as those gathered from walls. In exceptionally cold or wet seasons, the plums, as might be expected, are rather smaller on the Cordons. But the quality here has been excellent in all seasons. Singularly enough, too, the wasps are less troublesome to the fruit on the Cordons—possibly this arises from their novelty. It seems to take wasps and such insects some time to alter their habits. They have been accustomed for centuries to find luscious fruit on sunny walls, and they make a dash at the walls in search of it, flying right over the lines of ripe plums stretched in front of it, and seldom, apparently, finding out their mistake. For I have seen them often flitting from bough to bough on fruitless Apricot trees, in search of the delicious plums which they could obviously smell, but could not see or find.—D. T. FISH, *Hardwicke*.

SPATHIPHYLLUM CANDIDUM.

THIS very elegant plant was imported from the United States of Columbia by Mr. Bull, in 1874, through his collector, Mr. Shuttleworth. Like most of its allies, it requires to be grown in a stove temperature, and from its slender habit, and its pure white spathes, it is well worth a place where interesting plants are cared for, as it flowers in comparatively small pots, and thus becomes useful for setting beside other plants of different habit and character.

It has a creeping rhizome. The leaves, which are quite smooth, spring erect from the root-stock, and have green petioles 5 in. to 6 in. long; these are furnished below with a pale membranous sheath, above which, for about an inch, they are very slender and almost terete, passing into the short geniculus or joint by which they are connected with the leaf-blade, the latter



SPATHIPHYLLUM CANDIDUM.

being narrow, oblong-lanceolate, much acuminate, from 4 in. to 6 in. long, and of a bright green colour, paler beneath. The scape, which is also slender, is somewhat longer than the leaves, and frequently has the geniculus curved so that the position of the parts of the inflorescence is variable. The spathe is white on both surfaces, oblong-lanceolate, attenuately acuminate in form, $3\frac{1}{2}$ in. in length, and 1 in. in width. When these spathes are produced in a good tuft, well surrounded by leaves, this is, if not a showy, at least a very pleasing plant, at once distinct and elegant in character. The terete slender straight spadix is shorter than the spathe.

This plant was sent out by Mr. Bull under the name of *Anthurium candidum*, the figure here given being that published in his Catalogue for 1875, t. iii. It has, however, recently been referred to *Spathiphyllum* by Mr. N. E. Brown, as also has the allied *Anthurium Patini* of Dr. Masters, the *Amomophyllum Patini* of Engler. —T. MOORE.

SOME OF THE NOVELTIES OF 1878.

AS the years roll by, our gardens are besieged by novelties, in the shape of plants, flowers, esculents, and fruits, now with stronger detachments in one batta-

lion, anon in another, but on the whole, with little annual diminution of the attacking forces. And as in the case of an attacking army seeking to make good its footing on unfamiliar soil, some of its units are struck down and sink into oblivion, and others win their way to fame, so with the array of novelties which threaten our gardens; some are at once defeated by better productions, and others come to be useful or ornamental in their particular line. Thus it comes to pass that the novelties are welcomed, though they turn out many a trusty subject, perchance better than themselves, for in our garden domains the fancy which loves to look on new faces is as wide-spread as it is in society at large. The popular favourites come and go in rapid succession.

We cannot in our limited space attempt a complete muster-roll of the Novelties of 1878, but we propose to briefly notice a few of the most important of them, under their respective heads:—

STOVE FLOWERING PLANTS.

CONOPHALLUS TITANUM is the most notable plant of the year; it is a gigantic Arad, found in Sumatra by Dr. Beccari, and already introduced to Florence. Tubers nearly 5 ft. in circumference; leaf 45 ft. in circumscription, on a stalk 10 ft. high; spadix tapering, 6 ft. long, livid towards the top, the campanulate wavy spathe 3 ft. across, bright black purple. A veritable vegetable Anak.

IXORA SPLENDENS: a splendid garden variety, raised by Messrs. Cole, of Manchester: Cinchonaceæ. Leaves blunt-tipped; flowers in large, dense, cymose heads, brilliant carmine-scarlet; quite A1 amongst Ixoras.

XERONEMA MOOREI: New Caledonia: Liliaceæ.—A very fine perennial, of Iris-like habit, having the scape bent abruptly into a horizontal position, a little below the raceme of bright crimson flowers, which thns come to stand erect on the upper side; should it be a free-bloomer, it will be a very showy plant.

ERANTHEMUM LAXIFLORUM: New Hebrides: Acanthaceæ.—Half-shrubby and free-flowering, with ovate-oblong leaves, and large purple flowers, in axillary cymes.

RUELLIA (Arrhastoxylum) ACUTANGULA: Brazil: Acanthaceæ.—A stout-growing under-shrub, with quadrangular branches, large elliptic-ovate leaves, and erect cymes of bright, unequally-lobed orange-scarlet flowers; one of the more showy of the Acanthads.

CHEVALLIERA (Æchmea) VEITCHII: New Grenada: Bromeliaceæ.—A distinct and showy acanlescent perennial, with lorate, saw-edged leaves, and a central, erect, oblong head, of which the crowded recurved crimson bracts form the conspicuous portion. M. Morren reports that his plant of this Chevalliera has been blooming for 21 months.

STOVE BULBS.

CRINUM MACOWANI: Noman's Land: Amaryllidaceæ.—Allied to *C. latifolium*, and producing umbels of large bluish-coloured lily-like flowers.

HEMANTHUS RUPESTRIS; *H. MANNII*; *H. KALREYERI*: West Africa: Amaryllidaceæ.—These three species are of similar dwarfish habit, and produce their flowers before the foliage is developed; they all have showy umbellate heads of crimson or crimson-scarlet flowers, which render them valuable as decorative plants.

STOVE FOLIAGE PLANTS.

DIEFFENBACHIA SHUTTLEWORTHII: Colombia: Araceæ.—A very effective plant; stems erect, leafy, the leaves large, ovate-lanceolate, bright green, with a broad feathered silvery band on each side of and including the midrib.

ALOCASIA JOHNSTONI: Solomon Isles: Araceæ.—A very distinct-looking plant, the spiny stems being mottled with red and blackish green, and the blade arrow-shaped, with reddish veins. It has been suggested that it is a species of *Cyrtosperma* or *Lasia*.

MASSANGEA LINDENI: Peru: Bromeliaceæ.—Leaves decurved, ligulate-oblong, acuminate, pale green, marked with numerous transverse irregular broken lines of a deep brownish purple, the marking being sufficiently abundant to be attractive.

CESPEDESIA BONPLANDII: Columbia; Ochnaceæ.—A magnificent foliage plant; leaves tongue-shaped crenulated, 3 feet long; flowers large bright orange-yellow, in panicles.

DAVIDSONIA PRURIENS: N.E. Tropical Australia: Saxifragaceæ.—A bold, distinct, half-shrubby plant, with very large unequally-pinnate leaves, of a bright red while young, the hairy leaflets biserrate, and connected by a narrow wing, which is also doubly-toothed.

CROTON.—New forms of *Codiaeum*, popularly called Crotons, continue to appear. Amongst the best are *C. Mortii*, *Williamsii*, *rosco-pictus*, and *reginæ*, with broadish leaves; *C. gloriosus*, *Challenger*, *nobilis*, *princeps*, and *Prince of Wales*, with narrower drooping leaves; and *C. Katoni*, one of the trilobed section, which has the leaves thickly dotted with yellow spots.

PALMS.

KENTIA LUCIANI: New Caledonia; *KENTIA WENDLANDIANA*: Queensland; *ARECA PURPUREA*: Mauritius; *ARECA GRACILIS*; *LOXOCOCCUS (Ptychosperma) RUPICOLA*: Ceylon; *CALYPTRONOMA SWARTZII*: West Indies; *PLECTOCOMIA HIMALAYANA*: India. These are amongst the most ornamental of the additions which have been made to the pinnate-leaved series.

CYCADS.

CYCAS SIAMENSIS: Cochinchina.—A fine novelty, resembling *C. circinalis*, having a stout glabrescent trunk, marked with circular furrows, and flat pinnate leaves, divided into about sixty-five pairs of segments.

ZAMIA AMPLIFOLIA; New Grenada.—An exceedingly ornamental species, which has the few very large lance-shaped leaf-segments each 11 inches long, growing in pairs.

ENCEPHALARTOS FRIDERICI-GUILIELMI: S. Africa.—A very handsome plant, with a woolly trunk, bearing a crown of leaves, each having about 120 pairs of closely-set oblong-linear segments. The leaf-segments each terminate in a translucent spine.

BOWENIA SPECTABILIS SERRULATA: Queensland.—The beautiful genus *Bowenia* is distinguished by its bipinnate leaves; this is a remarkably handsome form of the original *B. spectabilis*, with the edges of the leaflets toothed.

FERNS.

ADIANTUM CYCLOSORUM: Peru.—A deciduous species of ornamental character, with broad tripinnate fronds, and specially remarkable for its cycloid indusia.

ADIANTUM BELLUM: Bermuda.—A pretty little plant, very like *A. fragile*, but obviously different, in not having deciduous, articulated pinules.

DAVALLIA FIJIENSIS: Fiji Islands.—One of the most beautiful of the Hare's-foot Ferns, having large coriaceous fronds, cut up into very fine divisions, the sori being seated in very deep and narrow cup-shaped indusia.

MICROLEPIA HIRTA CRISTATA: South-Sea Islands.—A beautifully crested fern, which has the advantage of being a very free-growing plant, as well as exceedingly ornamental; the apices of both fronds and pinnae are multifidly crested.

NEPHROLEPIS PLUMA: Madagascar.—A very elegant deciduous Fern, with oblong tubers which rest in winter, and in the growing season produce very long, narrow, elegantly-pinnate fronds, which especially adapt it for growth as a summer basket Fern.

CIBOTIUM CHAMISSOI: Sandwich Islands.—An ornamental arborescent fern, which differs from the other species from the same island, also recently introduced, in being less coriaceous, and not at all glaucous.

PLATYCERIUM HILLII: Queensland.—A distinct and elegant species of a very remarkable genus of Ferns, whose fronds have considerable resemblance to the horns of the elk, whence the popular name of Elk's-horn Fern; the fronds are greener than in the allied *P. alcicorne*.

LASTREA ARISTATA VARIEGATA: Japan.—One of the handsomest of the Ferns of the year; a hardy greenhouse plant, free-growing, with evergreen rigid pentagonal fronds, having a distinct yellowish-green band down each of its divisions.

LYCOPODS.

SELAGINELLA VICTORIE: South-Sea Islands.—A very handsome decorative garden plant, allied to *S. Wallichii*, of subsucculent habit, pinnately branched, the branchlets simple, an inch long, terminating in a slender tetragonal spike of equal or greater length.

SELAGINELLA BELLULA: Ceylon.—A free-growing, elegant plant, having the general aspect of *S. inaequifolia*.

ORCHIDS.

LELIA ANCEPS ALBA: Mexico.—A most charming variety. One can hardly form a conception of a flower more lovely in the purity of its whiteness, sufficiently ample in size, and spread out so as to show off its beauties in the highest degree.

LELIA DOMINIANA, and **L. SEDENI**.—Garden hybrids of great beauty, the first bred between *Cattleya Dowiana* and *L. elegans*, and the second allied to *devoniensis*; both remarkable for the superb colouring of their purplish-crimson lip, and both ranging in the front rank of ornamental orchids.

CALANTHE SEDENI: garden hybrid.—The richest and most attractive in hue of all the *Calanthes*; in the way of *C. Veitchii*, but with the colour much intensified; the result of a cross between *C. vestita rubro-oculata* and *C. Veitchii*.

MASDEVALLIA SPLENDIDA: Andes.—This being "in the way of *M. Veitchiana*, and equally as beautiful," must be a welcome guest in our cool orchid-houses; its blossoms are of a rich scarlet, flushed with a violet sheen.

BOLLEA LAWRENCEANA: Colombia.—A very handsome new orchid, having a violet-tipped lip, and yellow-tipped sepals and petals, the flowers being as large as those of *B. coelestis*.

DENDROBIUM WILLIAMSII: New Guinea.—A fine species, having flowers as large as those of *D. Dalhousianum*, with whitish sepals, rosy petals, and a rich violet-purple lip, which has an irregular squarish front lobe.

GREENHOUSE FLOWERING PLANTS.

BOMAREA CARDERI: Columbia: *Amaryllidaceae*.—The *Bomareas* are a set of climbing *Alströmérias*,

of which very little seems known from a horticultural point of view, except that many of them are grand subjects as conservatory climbers. *B. Carderi* is one of the finest, and bears large rosy-pink flowers, in grand drooping umbels.

CLAUSENIA CORYMBIFLORA: Loyalty Islands: *Rutaceae*.—A pretty shrub, whose large corymbs of white flowers are succeeded by odoriferous yellowish-white fruit.

AGAPANTHUS UMBELLATUS FLORE-PLENO: S. Africa: *Liliaceae*.—The African lily, *A. umbellatus*, is one of the finest of our old greenhouse plants; and the present new variety, with double dark blue flowers, must be a desirable acquisition.

HARDY SHRUBS AND TREES.

SYRINGA VULGARIS LEMOINEI: French gardens: *Oleaceae*.—A really handsome form of the common purple Lilac, from which it differs in having double blossoms.

MAGNOLIA STELLATA: Japan: *Magnoliaceae*.—A neat dwarf deciduous shrub, free-flowering, producing under cover in early spring its pretty white blossoms, which resemble small Water Lilies, and are naturally produced early, so as to run great risk of being frost-bitten in exposed places. Also called *M. Halleana*.

DAPHNE BLAGAYANA: Styrian Alps: *Thymelaceae*.—A very pretty dwarf evergreen shrub, with spreading branches, furnished with small oblong leaves, and terminated by heads of creamy-white flowers.

ACER PLATANOIDES COLUMNARIS: French gardens: *Aceraceae*.—A remarkable tree, with a straight erect trunk, and short densely crowded branches, forming a leafy column.

HARDY PERENNIALS.

MONTBRETIA POTTSII: South Africa: *Iridaceae*.—A charming half-hardy plant, with the habit of *Crocus aurea*, 3 to 4 feet high, with linear-ensiform leaves, and a long panicle of funnel-shaped bright yellow flowers, tinted outside with red.

IRIS KOLPAKOWSKIANA: Turkestan: *Iridaceae*.—A very beautiful Iris, of dwarf habit, its flowers dark purple in the apical half, white varied with purple in the basal half, and having a bright yellow median bar bordered with purple.

CROCUS ETRUSCUS: Italy: *Iridaceae*.—A very pretty spring-flowering species, with bright lilac-purple flowers, the three outer segments having five feathered lilac stripes down the back.

IXIOLIRION PALLASII: Turkestan: *Amaryllidaceae*.—A pretty hardy bulb, with linear leaves, and pretty funnel-shaped blue flowers, on a slender stem bearing one or two leaves.

SPIREA PALMATA ELEGANS: supposed garden hybrid: *Rosaceae*.—A nice border plant, with white flowers and red anthers; has given rise to sundry speculations, not yet set at rest, as to its real name and origin.

LATHYRUS DRUMMONDII: (?) garden variety: *Leguminosae*.—A desirable hardy plant, of the everlasting-pea type, with handsome cerise-scarlet flowers; a distinct addition to this useful group.

HARDY BIENNIAL.

CENTAUREA FENZLII: Armenia: *Compositae*.—"The noblest Centaury hitherto introduced into cultivation;" it has broad spreading root-leaves a foot and a half long, and numerous erect peduncles, each bearing one or two large heads of yellow flowers; altogether, a stately plant.

HARDY ANNUAL.

CAMPANULA MACROSTYLA: Asia Minor: *Campanulaceae*.—A remarkable plant with broad bell-shaped flowers, of a purplish rose, having a much enlarged and much projected style.

FLORISTS' FLOWERS.

Here we can only name some of the more remarkable varieties of the season, chiefly those which have been certificated:—

ROSES: The New English-raised varieties of high promise are Countess of Rosebery, Duchess of Bedford, Harrison Weir, Penelope Mayo, Dr. Sewell, Dr. Hogg, and Mrs. Laxton.

PELARGONIUM (show): Amethyst, Illuminator, Bertie, Marmion, Fortitude, Symmetry, Invincible, Henry; (fancy): Insulaire, Placida, Jannette; (ivy-leaved): La France, A. F. Barron, M. Victor Lemoine, Elfrida, Sarah Bernhardt; (zonal, single): White Vesuvius, Jeanne d'Arc, Dr. J. Denny, Fanny Catlin, Titania, Sophia Birkin, Sunbeam, Manfred; (zonal, double): Delobel, M. Plaisançon, Jean Dolfus, Nympe, Dr. Jacoby, Henri Beurrier.

PRIMULA SINENSIS (single): Williams's Fimbriata coccinea, Sutton's Ruby King, Tomkins's Brilliant; (double): Gilbert's Earl of Beaconsfield.

BEGONIA (single): Lælia, Mrs. Todd, Chiswick Blush, Nellie May; (double): President Burelle, Louis Thibaut.

GLOXINIA: Beauty of Anerley, Berkshirei, Mont Blanc, Boule de Feu, Madame de Stael.

AMARYLLIS: Mrs. Rawson, Caledonia, Crimson Banner, Dr. Hogg, Mrs. McKinnon, Mrs. Bullen.

CYCLAMEN: Mont Blanc, White Beauty, roseum grandiflorum, Rosy Morn, Brilliant.

ABUTILON: Lady of the Lake, Louis Marignac, Reine D'Or, Louis Van Houtte.

AZALEA INDICA (double): Madame C. Van Eeckhaute, Kaiser Wilhelm; (amœna): William Carmichael, Mrs. Carmichael, Lady Musgrave, Princess Maude.

CHRYSANTHEMUMS: Golden Empress of India; (Japanese): M. Crousse, Nuit d'Automne, Rosa Bonheur, Père Delanx, Fulton, Fulgore.

CLEMATIS: Earl of Beaconsfield.

VERBENAS (bedding): Bessie, Gruss aus Erfurt, Madame Emile Hutter.

AURICULAS (white edge): Omega; (grey edge): Silvia; (self): Annie; (alpine): Mariner, Mrs. Meiklejohn, National, Queen.

CARNATIONS: CB. Albert Chancellor; PPB. Unexpected; (scarlet): A. Alegatière; (clove): Rosa Bonheur.

PICOTEES (yellow): Earl of Beaconsfield, Alice Eleanor, Henry Tait, Ophir; (rose): Royal Visit, Mrs. Payne; (red): Mrs. Wilson, Princess Mary.

DAHLIAS: Joseph Ashby, Lord Beaconsfield, Prince Bismarck, Helen Macgregor, Clara, Aurora; (fancy): Gaiety, Florence Stark.

GLADIOLI: Gorgonius, Herois, Telamon, all raised by Messrs. Kelway and Son.

HYACINTHS: Grand Master, King of the Blacks, Queen of the Blues.

POTENTILLAS: Prince Arthur, double yellow, a good addition to these most useful hardy perennials.

PRIMROSES: Ealing Crimson, Octoroon, Prince Charming, Magenta, Scott Wilson, the last a decided advance towards the attainment of a blue Primrose; (double): sulphurea major.

PANSIES (fancy): F. Perkins, Mrs. Wolfe Henway, Hugh Fraser, Lady Falmouth, Lady Clerk.

FRUITS.

Most of our notes on fruits and vegetables are from the *Gardeners' Chronicle*:—

APPLES: Baumann's Red Winter Pearmain: a large and extremely handsome highly-coloured fruit, somewhat resembling the Bleuheim Orange, and of German origin, ought to be grown by everybody. Dr. Hogg: a large kitchen Apple, resembling the White Calville, in outward appearance

and in texture of flesh. Barnack Beauty: very pretty and useful, and a great cropper. Killick's King William: an exceedingly pretty and good dessert variety.

PEARS: Dr Hogg Bergamot, a fine addition to our small dessert sorts, being 'superior' to the Seckle, which it greatly resembles. Theresa Nevill: a good late variety. Beurré Léon le Clerc: a very good October fruit, far too little known. St. Swithin: one of the earliest sorts yet obtained.

PLUMS: the Sultan, a variety sent out by Mr. Rivers some years ago, was especially good last season, and deserves to be extensively cultivated.

GRAPES: no novelty. Golden Queen, although fairly well exhibited, has receded a good deal in public favour. Venn's Black Muscat is being gradually merged in the old Muscat Hamburgh.

PINE-APPLES: Lord Carington is a variety of vigorous habit, remarkable for its fine flavour and its keeping qualities; it proves to be equal to any Pine-apple in existence. Lady Beatrice Lambton is a magnificent object to look upon, and is of fine constitution, large, and of good quality. Lady Florence Lambton, a sister variety, is large and handsome, but uncommonly like a Queen.

MELONS: Dell's Hybrid is a green-fleshed variety of first-rate quality; Gilbert's Netted Victory is a fine white-fleshed sort of the greatest excellence; Gilbert's York Herald is a fine round thick scarlet-fleshed novelty of high merit.

FIG: Osborn's Prolific, a dark brown fruit, with opaline flesh, is a valuable hardy sort.

STRAWBERRIES: Loxford Hall Seedling is a very good variety, later than the Elton Pine. Augusta Nicaise, a very excellent variety for pot-culture, large, a great cropper, and of fine quality.

ORANGES: The Long Orange is a very fine variety, pale in colour, and of ovate shape; it is sure to secure the attention of cultivators of these fruits.

VEGETABLES.

POTATOS: Sutton's Woodstock Kidney is one of the handsomest and finest-quality Potatos ever introduced; it was raised by Mr. Fenn, who ought now to be proud of his various successes. Radstock Beauty is a very pretty, red-flaked round, of fine quality. International Kidney is one of the very handsomest of Kidney Potatos, and an enormous cropper, but like many other good-looking things, not of first-rate quality.

PEAS: Laxton's Marvel is without doubt a variety of the finest-quality, and very large. So is Carter's Telephone, said to be like Culverwell's Telegraph.

BROCCOLI: Veitch's Self-protecting, a fine, late, protecting variety, succeeding the Autumn Giant.

CABBAGE BROCCOLI: Mr. Gilbert's Cabbage Broccoli is a welcome addition to our winter vegetables, being a sort of intermediate form between the two, and standing the winter well. It is of excellent quality, and quite unique.

CABBAGES: Early Boulogne is the earliest of all cabbages; Bacalan is a large, very distinct, firm-hearted variety, excellent for autumn use.

LETTUCES: The Bossin is a very large late cabbage lettuce, standing the effects of dry weather better than any other variety.

ENDIVES: Vilmorin's Fine Curled Picpus is really excellent. The White Curled is also a distinct and excellent hardy sort. The Round-leaved Batavian is the only variety of that section worthy of cultivation.

BEETS: Frisby's Excelsior is a very good variety.

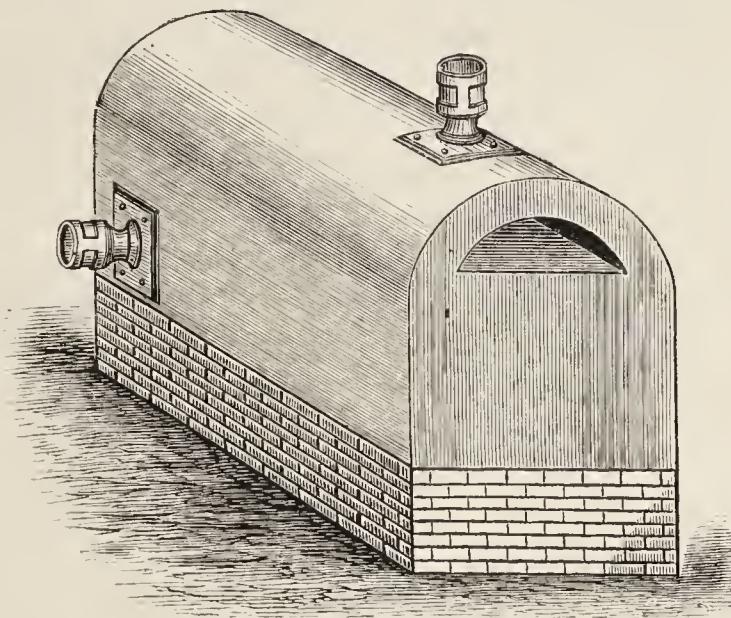
CUCUMBERS: Carter's Model may be mentioned as a very fine sort.

T. M.

THE GLASGOW BOILER.

ACCOMPANYING these remarks are figures which represent the form of the Glasgow Boiler, as seen from the front and the back. It will be observed that it is virtually a flued saddle-boiler, and therefore, as every gardener of experience knows,

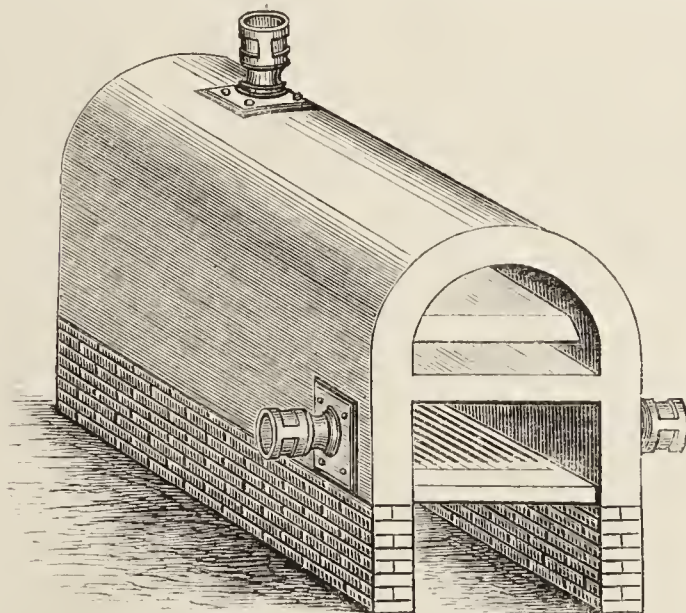
ing figures—are the invention of Mr. Robert Bullen, the Curator of the Royal Botanic Garden, Glasgow, who states that they cannot be equalled for economy and power. To the establishment under Mr. Bullen's charge we learn that they have proved a great boon both



GLASGOW BOILER: BACK VIEW.

must be, if well set, efficient for the heating of a hot-water apparatus, which does not over-tax its capacity. These boilers, which are

as regards economy of fuel, and comfort to those who have to do the stoking. One of their merits is that they will consume the commonest



GLASGOW BOILER FRONT VIEW.

made of various sizes, and of two forms—one continuous beneath, and thus having a contained ash-pit, the other arched, with the sides set on brick, as shown in the accompany-


description of fuel, and another that they do not get fouled, as the flues can be as easily brushed out as the shelves of an ordinary kitchen oven. The advantages claimed for

them are "their capability for holding, heating, and circulating a much greater volume of water, at a higher maximum temperature, in proportion to their size, than any other boiler yet invented."

So much for what is claimed for the Glasgow Boilers. As regards their performance, Mr. R. Todd, of Ascog Hall, says that he expected to find them powerful, and they are that and more, being clean, easily wrought, and quite a success. Mr. Pettigrew, of Ashburn Gardens, says they give him very great satisfaction, being far superior to any boiler he knows, easily wrought, and capital smoke-consumers. Messrs. J. and R. Thyne have also recently superseded their lime-kiln apparatus by one of these boilers (an 8-ft. one), and find it does the same amount of work more efficiently and economically. In a letter now before us, dated December 27th, 1878, they say:—"After a trial of many boilers, we unhesitatingly give the palm to Bullen's No. 1; in fact, it has proved a real boon to us during this severe weather." This, with Mr. Bullen's own experience at the Botanic Garden, is very satisfactory evidence that the boilers do their work well.—T. MOORE.

DRESSING CARNATIONS.

LIBERTY OR RESTRICTION—COMMUNION OR ISOLATION?

 CORRESPONDENT in a contemporary, at the fag-end of a discussion on dressing Carnations, raised a question as to the "legitimacy," as he called it, "of one fancier growing the flowers and another fancier dressing them." He thought the practice not right, "unfair," and that if he, who had been a grower of Carnations in a small way for many years, and had been "fairly successful" at local shows, came to London to compete, he would be very seriously handicapped in entering the lists against the "best grower in England," who called to his aid "perhaps the best dresser."

Another correspondent, Mr. R. W. Beachey, sustains this argument, and says:—

"The show-bench is, it seems to me, a test of individual skill, and it is no more fair for the exhibitor to import external aid in dressing his flowers than it is to import flowers from a neighbour's garden, or to gum the petals of one flower into another. It is said that the system of florists helping one another tends to promote good-fellowship. That may be so, where they are well known to each other, and the skill of the opponents is nearly equal; but one must not forget that there are often aspirants to fame cropping up at the shows who labour under the disadvantage of not knowing their fellow-exhibitors, and under the still greater disadvantage of unskillfulness in the art of the florist. Such, naturally, feel aggrieved. An

element is introduced into the competition for which they were not prepared. They find, to their dismay, it is one thing to grow a good flower, another to be able to show it. They have patiently acquired sufficient knowledge of the first, but are all at sea when it comes to the second. Is it to be wondered at that when they see two or three skilled dressers engaged in transforming a stand of flowers into show trim, and are unable to do it themselves or to obtain help, that they feel an unfair advantage is being gained over them?"

Mr. Beachey then suggests, as a remedy for this assumed evil, "that a rule shall be made that exhibitors, or *their gardeners*, must dress and set up their own flowers without assistance, and that any infringement of this regulation shall disqualify."

Let us see to what these arguments tend. There is no axiom better established than that an impracticable law is the worst of all laws. Could the above proposition be carried into practice? Speaking with many years of experience of exhibitions and exhibitors, I say no. What would be required to carry it out? Nothing less than that the whole work of preparation for the exhibition should be done in public, under the eye of persons competent to say the work was begun and finished without help, and who yet could be trusted to give no help. For remember how subtle is the work of preparation—the transposition of a petal here, the change of a flower there; who is there who, having seen, has not been filled with delight with the marvellous change a Turner has worked in the arrangement of a stand of twenty-four, or even twelve flowers? And who is there, with a florist's instincts and a florist's sympathies, who could remain impassive while good flowers were being done to death? Yet, if such a rule existed and was complied with, this must be the result. Isolation absolute, iron restraint; florist must cease even to speak to florist, for the question might well be raised that help had been so communicated. The truth is, these proposed restrictions, all unconscious as their authors probably are, spring from that old bad root, suspicion and jealousy, which years ago ramified in the requirement that the productions of the exhibitor should be cut under the inspection of a Committee; and that judges should, under no circumstances, know the productions of the exhibitor. Impracticable requirement, of course; fertile indeed in disseminating jealous feeling, fatal always to exhibitions.

Did this rule exist, there could be no teaching, for teaching, if real, is ever an "assistance," and "assistance" would infringe the rule.

To such ends, monstrous and absurd, do these efforts towards restraint always tend. But I am happy to say we need have no fear of this ever being brought to a practical issue.



Pear Beurré Giffard.

W. L. F. del.


P. De Fannemaker chromolith. (Gand) Belgique

Little Pedlington itself would recoil from the proposal, and the mighty mass of florists are men too large of soul to harbour petty jealousies. There was a time when exhibitions were confined to a "town and district five miles around." Now, florists take in the world.

I have not the honour to know Mr. Beachey, but I think I may venture to assume my experience has been as lengthy and as varied as his. I have had the pleasure to know many aspirants to fame in the past, and I trust I shall be spared to know many more in the future; but as amongst Carnations and Picotees, I have never known one, and I believe I never shall know one, who, having "patiently acquired" the art of growing a good flower, but not having a knowledge of how to show it, could not, *when he desired it*, obtain the needed help to place him on a level with his compeers. Never yet in a long floral life did I know a frank appeal for help meet other than warmest response. Never yet did I know a skilled florist refuse to give the fullest, freest instruction. Once, twice, or thrice in a life-time we may perhaps meet with a pitiful Jack Horner, who gets into a corner to eat his floral pie; but the plums in that pie are fearfully unwholesome, uneasy of digestion, and unhealthy in their results, whilst the great body of florists abound in good-fellowship and in the frankest of communion. Restriction is for ever proposing to bring his competitors down to the level of his own acquirements, (narrow acquirements, indeed!) Liberty opens wide the door, and cheers on the best in the race. Isolation hugs her gift to her sterile breast, only to make it barren. Communion, always abounding, ever imparts and ever finds her gifts increase. And so it will be to the end.

Some regulation is, of course, necessary in shows, so that the race, or the results of the race, shall not be all to the strong. Weaker members, whilst always invited into the open, should yet have a course from which the stronger competitor should be excluded; but this is very different, both in principle and practice, to the proposal to compel florists to evolve their knowledge and their art only from their own heads.—E. S. DODWELL.

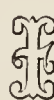
THE BELLE LYONNAISE ROSE.

 HIS is one of the most beautiful of Tea-scented Roses. The flowers are large, full, of fine form, and of a canary-colour, changing to white. It is a robust and free grower, and does best when trained up a south wall; but to have it fine, it should be grown under glass. We have a plant of it here thus situated. It is on the Brier, is

planted inside, in a house devoted to general purposes, and is trained along the front of the house, pretty near to the glass. It furnishes a quantity of flowers during the spring months. It also flowers freely during the autumn months; indeed, we have had a good many blooms of great delicacy of colouring during the past autumn, up to a few weeks ago. As an autumn bloomer it is invaluable. We have some plants of Maréchal Niel in an adjoining house treated in a similar manner; these furnish a quantity of blossoms during the spring, but they give us very few in the autumn.—M. SAUL, *Stourton*.

PEAR BEURRÉ GIFFARD.

[PLATE 484.]

 IN this we have one of our very best early Pears, and one deserving of far more extended cultivation than it has yet secured. Some confusion seems to have arisen, owing to this variety having got mixed up with the Peach Pear, Doyenné d'Été, &c., although it is really very distinct. In Hogg's *Fruit Manual*, which is usually most reliable, it is stated to be "about medium-sized; eye *closed*, set in a shallow basin." In Scott's *Orchardist* it is given as "second size; eye *open*, set in a shallow basin. Our figure is a fair representation, and speaks for itself.

It may be thus described:—Fruit below medium size, pyriform, generally shorter than the figure, very even and regularly formed; stalk nearly an inch long, obliquely inserted. Skin greenish-yellow, mottled with pale red and russet on the sunny side; eye open, the segments short, set on the surface of the fruit. Flesh white, melting, very sweet and pleasant. It is a very pretty Pear, a free grower, and great cropper. The fruit ripens in August, succeeding that of the Doyenné d'Été and Citron des Carmes.

The Beurré Giffard, observes M. F. Burvenich, in his remarks accompanying a plate of this variety, published recently in the *Bulletin d'Arboriculture de Floriculture et de Culture Potagère* (iii., 5), forms rather a pretty and regular pyramid. Like the majority of good French Pears, it came from Anjou. It was originally found as a wilding in 1825, by M. Nicholas Giffard, of Fouassières, near Angers, and was first described in 1840 in the *Bulletin of the*

Angers Horticultural Society, by M. Millet, its president, "The branches of the Beurré Giffard," continues M. Burvenich, "are of a deep brown purple, with scattered lenticels; the leaves are large, and few in number, which gives to the tree a meagre and unfurnished aspect. The fruits are pyriform, inverted cone-shaped, olive-yellow, with a blood-red cheek, strewed with numerous dots of a very bright tint. The flesh is white, very delicate and juicy, with an agreeable aroma. The eye is close, and but little sunk; and the peduncle is rather long and woody, which causes the fruit to hold well to the tree. The fruit lasts a long while in maturity for a summer pear, and as an early fruit, no variety of its season can rival the Beurré Giffard."—T. MOORE.

THE RANUNCULUS.



THE Persian King-cup (*Ranunculus asiaticus*) is a florists' flower, which naturally blooms in May and June. The varieties are endless, and their blooming season may be considerably extended by planting at different seasons. They excel most flowers in their symmetry of shape, and in the brilliancy of their colour. No two plants from seed produce flowers exactly alike, or the same as the original. A bed of choice flowers of this plant presents one of the most attractive objects possible; every shade of violet, purple, and black is seen, mingled with snow-white and golden-yellow, while some are striped like the Carnation, edged like the Picotee, or mottled, marbled, and spotted in the most interminable diversity. Yet how seldom do we see them?

They are easily grown from seed, which should be sown about the middle of October, in boxes about 6 in. deep, using ample drainage, and a compost of rich garden loam; cover very lightly with dry soil, and water carefully from a very fine rose. The boxes are best set in a cold frame, with a north aspect, where air and light can be freely admitted, but not the mid-day sun. The young plants will appear in about five weeks, and will require little attention, beyond occasional waterings, until the end of July, when they should be taken out of the soil, gradually dried, and kept in dry sand until required for planting. These seedling tubers, if planted again in October or February, will mostly bloom the following May or June.

Named varieties are increased by offsets, which should be separated from the tubers when they are taken out of the ground; these should be kept in bags or boxes, until required for planting. The medium-sized tubers give the best blooms, the very large ones being apt to divide into offsets, and seldom flower strongly. The planting season may depend, to a great extent, upon the time at which they are desired in bloom; but as a rule, if strong tubers are used, they may be planted at the end of October; if smaller offsets, February or March; the former being apt to become mouldy if kept out of the ground till spring, the latter being more susceptible of injury by frost and wet weather. Some half-decayed stable-manure or other protecting material, which can be removed after the severe weather is past, is absolutely necessary for those which are planted early. The bed in which they are to be planted should be filled with fresh, loamy soil, richly manured to the depth of a foot or more; in fact, a layer of well-rotted cow-dung at the bottom of the bed is found of great benefit to them, both as retaining moisture and supplying nourishment. Unrotted turf and fresh dung are sure to cause canker in the tubers. They are best planted in lines, six inches apart, placing some sand below and above each, and covering them with two inches of fresh loam. It is important, when the aspect of the bed exposes it to the full sun throughout the day, to be provided with an awning, which must be used when the flowers are expanding or expanded, for bright sunshine will not only cause them to run or fade, but cause the leaves to turn yellow prematurely, thus both affecting the bloom and injuring the plant, by preventing the formation of sufficient cambium to nourish and mature the tuber.

The following will form a good selection:—

- BELLA DONNA, white, violet spots.
- BLANCHE PICOTEE, white, black spots.
- BLANCHE SUPERBA, splendid white.
- BELLE BERGÈRE, fine lilae.
- BISHOP'S ROSE, pink, dwarf.
- CARLO DOLCE, white, rosy margin.
- COMMODORE NAPIER, yellow, pink-edged.
- COURONNE D'AMOUR, lilae.
- COURONNE DE CELLE, violet.
- CROWN OF AMSTERDAM, rosy violet.
- DOLLARD, large white, violet-tipped.
- DARIUS, creamy white.
- DÆDALUS, crimson.
- EUPHROSYNÉ, rosy red, bordered yellow.
- EUTOPIA, white, violet margin.
- FIREBALL, fiery red.
- FRIDOLINE, white, spotted with rose.

GRAND DUC (Grootvoorst), extra red.
 GLORIOSA SUPERBA, bright crimson.
 GRAND FINANCIER, dark olive.
 GRAND VAINQUEUR, white, spotted violet.
 HECTOR, white, tipped rose.
 JANALIÈRE, carmine.
 JAUNE SUPRÊME, pure yellow.
 KING OF POLAND, lilac.
 KING OF THE NETHERLANDS, black.
 KISKOV, dark purple.

MARIE STUART, yellow, variegated.
 ŒIL NOIR, glossy, jet black.
 OPHIR D'OR, yellow, spotted with black.
 OMPHALE, sulphur, with red margin.
 PRINCE DE GALITZIN, yellow, spotted red.
 QUEEN VICTORIA, deep rose, with green centre.
 REINE ESTHER, white and rose.
 SIR WILLIAM PENN, white, purple margin.
 SANG DE BŒUF, fine brown.
 —ROBERT BULLEN, *Glasgow Botanic Garden.*



CROTON MACULATUS KATONI.

IT will be seen that the subject of our present illustration, for which we are indebted to the Messrs. Veitch and Sons, belongs to the series of Crotons with trilobate foliage, amongst which it is distinguished by the regular spotting of its variegation. Indeed, it may be compared to a spotted form of *C. Disraeli*, the form of the leaves being similar—that is to say, three-lobed, with the two lateral lobes abbreviated, and the terminal one elongated and widest near the upper end. The colour is a deep bright green, densely dotted

over the whole of the surface with yellow spots of moderate size. The Messrs. Veitch describe the habit of the plant as being neat and compact, with spreading leaves, which display their characteristic features to the best advantage. They add that for its introduction they are indebted to Sir William MacArthur, of Sydney, N.S.W. It probably comes from the South-Sea Islands. Its distinctness of character from any of the many varieties now in cultivation will render it both useful and welcome. Those which come nearest to it in

the form of the leaves are the varieties named Disraeli, Earl of Derby, and Lord Cairns, of English collections, and the trilobus of the Belgian gardens.—T. MOORE.

INDOOR BERRY-BEARING PLANTS.

CALLICARPA PURPUREA.

PLANTS which bear a profusion of brilliantly-coloured berries are justly appreciated for their ornamental qualities, more particularly during the winter season. Allow me to claim a prominent place amongst them for the *Callicarpa purpurea*, an old neglected plant which one seldom sees.

The *Callicarpa* is a stove evergreen shrub, native of the East Indies, growing from two to three feet in height; and as the name denotes, bearing a profusion of bright violet-purple berries, which, individually, are but small, but being produced in neat regular clusters of from 20 to 30 in the axil of each leaf, they have a remarkably pleasing effect; and associated with brilliant red and yellow-berried plants, they form an effective and striking contrast. They are freely produced from cuttings, and as freely grown, being amenable to general stove treatment. The soil should be fibry loam, peat, charcoal, and sand, and they must not be over-potted; 5, 6, and 7-inch pots will be the most serviceable sizes to plant in, for general work. Although they grow freely and make rapid progress in a close humid atmosphere during the early stages of growth, it will be necessary, as the plants attain maturity, to afford them a fully exposed situation near to the glass, with a free circulation of air, without which the berries would not set or be produced with that regularity which results from more complete exposure. This is one of many plants that would succumb to shading in any form—a fact which cannot be too strongly impressed on cultivators, as numberless plants, stove-plants more particularly, are seriously, if not permanently, injured every year from over-shading. The *Callicarpa* grown in small pots is particularly serviceable for associating with flowering plants in trays, forming a pleasing contrast and standing well.

THE SKIMMIAS.

The *Skimmias* are very useful plants for decorative purposes, being of a compact habit,

and bearing large clusters of bright crimson or scarlet berries. These plants are not very readily managed, to keep them in the compact form and lustrous health which they must possess to be at all effective; and from the fleshy nature of their roots, they are impatient of being disturbed, and therefore should be always grown in pots when used for decorative purposes. The plants delight to grow in a rich sandy peat, and will keep healthy for years in comparatively small pots, if well attended to during their growing season. They dislike coddling in any shape, and prefer partial shade, with an abundance of water during their season of growth. Under these conditions, they not only set their berries better, but are exempt from red-spider, which is one of their greatest enemies, when exposed in a dry situation.

AUCUBAS.

Since the introduction of the male form which enables us to obtain the beautiful scarlet berries in rich abundance in combination with the grand and effective foliage, the *Aucuba* has perhaps become the most effective berried plant we possess for all purposes of adornment. Grown as bushy little plants, in 6-in. or 7-in. pots, they are most useful; but to insure perfect fertilisation, the female plants must be set in a cool, airy house, with a few male plants amongst them. Whether, however, they are plunged in a house, or out-of-doors in a favourable situation, which will answer, fertilisation must be assisted, the pollen from the male flowers being conveyed to the stigmas of the female flowers with a camel's-hair pencil, during bright sunny weather. When it is necessary to preserve the pollen from the male plants, it can be kept in a dry situation, between pieces of glass or in tin-foil, for several weeks. Any ordinary soil will grow *Aucubas* perfectly. The only care important with plants in pots being to attend duly to watering them, and to syringing overhead, to keep the foliage healthy.—GEO. WESTLAND.

BEGONIA INCARNATA.

AMONGST the many species and varieties of *Begonia* now grown, this fine old plant, though exceedingly beautiful, is seldom seen in cultivation. I have grown a plant of it in the past year in a pillar form, and planted out in the border of a warm conservatory. The plant is now nearly nine feet in height; it has been covered with its fine

pink flowers all the summer, and is yet in this dull time of the year in good flower. The border it is grown in consists of light loamy soil, having some leaf-mould mixed with it; and it seems to suit this *Begonia* as well as plants of *Bougainvillea glabra* grown in it.

As a companion to *B. incarnata*, I have planted *B. fuchsoides* in the same border; it is trained in the same form, and is about 12 ft. in height. Both it and *B. incarnata* have furnished an immense quantity of cut-flowers all through the summer. The beautiful coral-coloured flowers of *B. fuchsoides* sets off wonderfully the effect of other flowers in bouquets, or when cut for purposes of decoration.—WILLIAM TILLERY, *Welbeck*.

VILLA GARDENING.

February.

UP to the time of writing, the frost has continued to lock up the ground against all out-door gardening operations; and for a considerable portion of the time, snow has covered the face of the earth. Many gardeners have indeed reason to be thankful it was so, as it has served as a screen to many a choicer plant that might otherwise have suffered. "He giveth snow like wool;" and like wool, it is a warm covering from the effects of severe frost. The beneficent hand that flings forth such a wealth of joyous rays in summer dispenses the winter's cold,—

"His life within the keen air breathes,
His beauty paints the crimson dawn,
And clothes the boughs with glittering wreaths."

Greenhouse.—It has taxed the energies of many villa gardeners to the fullest extent to keep the frost from their houses. Those who have no regular heating apparatus, but have had to trust to something of a temporary character, have also had to be constantly watchful and attentive. Hundreds of plants growing in unheated structures have been lost, because the soil about the roots was wet when the frost came and the houses damp. Those who had sufficient foresight to keep their plants dry about the roots, during the depth of winter, have come through the ordeal comparatively unharmed. We have seen *Abutilons* in variety, *Ficus elastica*, *Hoya carnosae*, *Indian Azaleas*, various succulents, *Fuchsias*, *Pelargoniums*, *Berried Solanums*, &c., carried through the winter almost unhurt, with only the aid of a paraffin lamp, and a plentiful use of newspapers in the bitterest weather, because allowed to have become dry when the pinch came. This is a very important matter, and should be made a golden rule with villa gardeners.

There are some persons who think severe frost destructive to all insect life. It has not been so in the case of green-fly on the leaves of *Pelargoniums*, in a temperature something below freezing-point; they are not dead, at any rate. It is in the early spring months that green-fly multiply with great rapidity, and as soon as possible the plants should be thoroughly fumigated with tobacco-smoke, to rid them of this pest. This will be particularly necessary in the case of soft-wooded plants, such as *Pelargoniums*, *Calceolarias*, and *Cinerarias*. After the fumigation, any plants of these which do not require repotting may be top-dressed with some good soil. The young plants will require repotting, and this should be done as soon as the weather is favourable. Plants to be repotted, if dry, should be well watered two days previously, so that the balls of soil can be well moistened through at the time of shifting. Any *Fuchsias* that it is desirable to start early into growth can be brought from their winter quarters, and be shaken out from their pots, the roots pruned, repotted in smaller pots, and placed in the warmest part of the house; they should be sprinkled occasionally on the stems, to induce them to break freely, but give water sparingly at the roots till they commence growing.

Stock plants and store pots of cuttings should be gone over, picking off dead leaves and removing decaying parts from the former, and slightly stirring the soil and top-dressing the latter. Water should be sparingly given till the weather becomes warm and genial. This will come before very long; the force of the winter will soon be spent, and the longing for spring will be gratified by its advent. Cleanliness in all parts of the house and all plants should now be the order of the day. They will start into activity all the better when the time comes. A little *Lobelia*, *Petunia*, *Phlox Drummondii*, &c., should now be sown, placing the seed in a gentle heat, and pricking the small plants off into store-boxes or pots, when large enough. We shall, in all probability, have a late spring, and the villa gardener will be well employed in anticipating it, as far as he can.

Cold Frames.—But little can be done in the case of the occupants of the Cold Frame while the frost lasts. We have taken a little extra care of a few choicer things that required some additional protection, by laying strips of wood among the pots, and over these a layer of newspapers, and keeping the lights firmly closed, but adding no outside covering. The plants are well protected, but they are not so much in the dark as when a heavy covering is placed on the frames. As soon as a thaw sets in, the lights should be taken off, the newspapers withdrawn, and in all cases where the frost has loosened the soil from the pots, it should

again be gently settled about the roots, by giving the bottom of the pots a rap against the side of the frame, and the soil a slight pressure with the fingers. All decaying leaves should be taken off. *Auriculas*, and especially the choice kinds, should be kept near the glass on a raised stage, or stood on inverted pots, so that the air can circulate about them. They need to be kept very dry just now, and the plants should be preserved from any damp settling on the leaves. In another month many hardy plants will begin to be very active, and then it is that the gardener reaps the rich reward of his careful attention.

Flower Garden.—Here but little can be done while the frost lasts. We fear many a prettily-designed spring garden will have been quite wrecked, as *Silenes*, *Forget-me-Nots*, *Limnanthes*, *Wallflowers*, and many common things have suffered much from the frost. Even where a reserve of plants has been kept, they have also suffered. Such things as *Double Daisies*, *Primroses*, *Polyanthuses*, and *Pansies* have suffered very much, and cases have occurred where hardy ornamental shrubs planted in December have been much cut about owing to recent transplantation. The villa gardener must make the best of his losses, and by-and-by, when the weather is genial, repair the breaches in his beds as best he can. Happy are those gardeners who had their unoccupied flower-beds thrown up roughly for the winter before the frost set in.

Kitchen Garden.—Preparatory work should be entered on as soon as the weather allows of its being done. Getting out manure, digging, trenching, and stirring the surface between growing crops, should all be done when possible. When it is dry and the soil workable, beds for *Onions* should be formed, and the soil prepared for *Carrots*, *Parsnips*, *Beet*, and other tap-rooted vegetables. On a warm, sunny border, a little *Radish* and *Lettuce* can be sown: of the former, *Wood's Frame*, and the *Scarlet* and *White Olive-shaped*; of the latter, *Leyden White Dutch* and *Paris White Cos*. Some *Early Peas* and *Long-pod Beans* should be sown; also a little *Summer Spinach*, *Parsley*, and *Cabbage*. At the end of the month, a herb-bed can be made, by dividing some old roots, and replanting them in good soil.

Fruit Garden.—During frosty weather, all *Apple*, *Pear*, *Cherry*, and *Plum* trees growing in the open as standards or pyramids, can be pruned, as a means of saving time, as when the frost breaks there will be an abundance of work to occupy the time of the gardener. *Gooseberries* and *Currants* can be pruned also; and the prunings not required for cuttings taken away and burned. *Strawberries* can now be top-dressed with great advantage, using decayed leaves, good loam, and plenty of invigorating manure.—SUBURBANUS.

GARDEN GOSSIP.

THE ROSE ANNUAL for 1878-9, by Mr. W. Paul, published by the author, is always welcome, since we find in it portraits of some of the best new roses, and a variety of information, under six heads, concerning these popular flowers. The varieties, of which illustrations are given, are *H.P. Duchess of Bedford*, raised by Mr. Postans, and to be sent out by Mr. Paul this season, a dazzling light scarlet-crimson, large, full, and globular, the growth vigorous and the foliage fine, one of the first to bloom in autumn. *H.P. Jean Liabaud*, a velvety-crimson shaded with black, introduced by M. Liabaud, of 1875. *Tea Souvenir de Madame Pernet*, introduced by M. Pernet in 1873; a beautiful salmon-pink, of large size, with shell-like petals, not yet very widely distributed, apparently because not well known, but really a very fine flower, and a rose of vigorous growth. *Tea Madame Lombard*, a lovely rose, introduced in the autumn of 1877 by M. Lacharme, of vigorous growth, with salmon-pink flowers shaded with rose, the colours similar to, but stronger, than those of *Souvenir de M. Pernet*. Mr. Paul thinks this the best novelty of its year. The remarks on New Roses, and on the Rose Shows of 1878, will be specially interesting to all who have Rose Gardens.

— PROFESSOR TODARO, of Palermo, has just published, under the title of *Relazione sulla Cultura dei Cotoni*, a most important MONOGRAPH OF THE GENUS GOSSYPIUM, illustrated by an atlas of coloured figures. The varieties or species described have all been grown under the author's own supervision, in the Botanic Garden at Palermo. The text includes an elaborate report on the cultivation of the cotton plant, not only in Italy, but in other countries; but this part, important as it must be to those engaged in the production of cotton, is of less general interest than the elaborate monograph, which is by far the most careful and complete which has yet appeared. Professor Todaro recognises fifty-four species of *Gossypium*, a much larger number than some other modern botanists are willing to admit. The question is, indeed, of little moment whether a particular form be a "species" or "variety," and on this point a divergence of views may be expected. There is, however, in this case, a manifold difficulty, for as with other long-cultivated plants, the cereals, for example, there are no means of determining with precision which are the wild and typical forms, and which are the result of the cross-breeding and intermixture of races incident on cultivation. The fine series of figures adds much to the value of this memoir, from a scientific point of view.

— ON December 24th, the presentation of a TESTIMONIAL TO DR. BALFOUR, Professor of Botany in the University of Edinburgh, which had been subscribed for by a number of his friends and former pupils, took place in the Court Room of the University. It consisted of a portrait painted by Sir D. Macnee, which is to grace the walls of the University. The portrait is a half-length, representing the Professor in the robes of the Dean of Faculty. Lord Curriehill, in a few appropriate words, afterwards presented to Mrs. Balfour a second portrait of the Professor, by the same painter, in which he is depicted clad in excursion garb of modest grey, with belt and spud, and holding in one hand a magnifier, and in the other a small wild flower.

— ON December 20th, a presentation was made to MR. WILLIAM SUTHERLAND, who has occupied the position of general nursery manager with the Messrs Ker, of Liverpool, for the past five years, on the occasion of his relinquishing his duties with Messrs. Ker, to undertake a similar post with Messrs. Ireland and Thomson, of Edinburgh. A complimentary dinner took place at the Aigburth Hotel, and after the dinner Mr. Sutherland was presented with a handsome gold watch and appendages, by Mr. Hinds, of Otterspool, on behalf of the subscribers.

— AT Dangstein, *MONNINA XALAPENSIS*, a rare and pretty Polygalaceous shrub, is employed for greenhouse decoration. It forms a small bush about two feet high, with alternate oblong, obtuse, shining, leathery leaves, and has dense terminal racemes 1-2 inches long, of flowers which are, individually, half-an-inch across, with two spreading wing-like sepals of a deep purple, the boat-like petals being of a rich yellow. It continues a considerable time in perfect condition.

— THE Lords Commissioners of her Majesty's Treasury have appointed Mr. Sadler, in succession to Mr. MacNab, to the Curatorship of the Royal Botanic Gardens, Edinburgh. Mr. Sadler has long been associated with the Gardens, through his connection with the Edinburgh Botanical Society, and the Scottish Arboricultural Society owes much to his energetic discharge of the duties attaching to the secretaryship of that body.

— THE French Government has conferred the Legion of Honour on Mr. MARTIN J. SUTTON, managing partner of the firm of SUTTON and SONS, Reading, as a special recognition of the merits of the exhibits of that firm at the Paris Exhibition, and of the services thereby rendered to Horticulture and Agriculture.

— THE late Mr. McNab, of Edinburgh, has described in the *Garden* a very successful plan of layering shrubs, which may be called WIRE-LAYERING. He says:—It has been adopted by me for the last forty years, and consists of twisting a piece of fine copper wire round the branch to be layered, sufficiently tight to indent the bark. The plants operated on were *Berberis dulcis*, *Andromeda floribunda*, *Abies Pattoniana*, *A. Hookeriana*, *Azaleas*, *Rhododendrons*, *Roses*, and many others. After preparing the shoots by trimming them up, particularly when leafy or branchy, the copper wire is twisted round them, and they are fixed in the soil; if short and springy they are pegged down, and if the soil be dry, sphagnum moss and a few stones are laid over the surface. Soon after layering, a swelling of the bark will take place, immediately above the ligature. During the following year it will be found that roots are freely produced from the swollen portion, particularly round the under-part. When rooted, the layers can be detached immediately below the wire. By this method all the kinds tried made excellent plants.

— IT has been found that SALT-WATER acts as a preservative of organic substances. Prof. Alphonse de Candolle, at a recent meeting of the Geneva Society of Physics and Natural History, presented a glass jar containing fruits of

the coffee plant, collected before maturity in Mexico, which had been preserved in a liquid which chemical analysis proved to be salt-water. It was fifty years since the jar thus filled was hermetically sealed, under the eyes of Aug. Pyr. de Candolle, and the coffee-beans it contained proved to be in a thoroughly satisfactory state of preservation. The late M. Thuret was in the habit of preserving flowers of Orchids in a saturated solution of common salt, and after ten years the preparations were found to be in good order, better even than those made with spirit of wine. Collections of flowers might therefore be readily made in flat white bottles, which would be very convenient for examination, as several flowers might be so placed in each bottle as to be seen in different positions, without turning the bottle and shaking its contents.

— A VERY handsome and excellent PINE-APPLE, LORD CARINGTON, has been brought under the notice of the public, through the agency of Mr. G. T. Miles, of Wycombe Abbey. When exhibited before the Fruit Committee of the Royal Horticultural Society, in 1876, it was greatly admired, and its flavour was pronounced to be unexceptionable. Early in 1877 it was again submitted to the Committee, and considered to be such a desirable acquisition that a First-class Certificate was awarded to it, and it was named Lord Carington. The largest fruit which has been shown weighed 7½ lb. The fine flavour which it possesses, combined with its wonderful keeping properties, will make it specially worth the attention of those interested in the cultivation of Pine-apples abroad for importation. Its constitution is vigorous, its habit erect, and its weight varies from 4 lb. to 7½ lb.

— THE CHINESE PRIMULA RUBY KING (Sutton) is one of the most beautiful varieties yet obtained. The plants show a remarkably even dwarf habit. The stems are stout, of medium height, bearing large trusses of grand flowers, many of which are two inches in diameter, finely fringed, and of an intense purplish magenta. Whether the splendid colouring or the size and form of the flowers be regarded, the variety is most striking and magnificent.

— THE GIANT ZITTAU ONION is a handsome late-keeping variety, which may be strongly recommended to those who require a sound keeping sort. It will keep firm and good till the month of July in a cool, airy room, after being stored from nine to ten months. The entire stock of seed is said to be in the hands of the Messrs. Veitch.

— IN the Paris parks, the PLUMBAGO CAPENSIS is used for bedding, and proves very effective. A large, elongated bed in the Parc Monceau was entirely filled with it, the plants, being 5-6 ft. in height, and bushy in proportion, and producing such clusters of flowers as are never seen in conservatories. Evidently it is one of the best bedding plants for that climate.

— TO prevent RABBITS BARKING TREES, Mr. C. W. Dodd recommends a mixture sold by Messrs. Davidson, oil and colour works, Leith. It is of about the consistency of treacle, and may be applied with a black-lead brush. A few drops on the stem of a small tree applied as

high as a rabbit can reach will run down the stem and preserve it from rabbits for several months. If it becomes too thick, it may be thinned with paraffin oil. Half a hundredweight (costing, he thinks, 18s.) is sufficient to preserve 20,000 trees for a season. It seems not to injure the growth of the trees. During snow, when the rabbits were hard pinched for food, they avoided all the trees in his plantations which had been dressed in the summer with this preparation.

— UNDER the pseudonym of "Abel Doubleday," Mr. John Smith, formerly Curator of Kew Gardens, has written a little shilling book, entitled ADAM SPADE, THE GARDENER (Hardwicke and Bogue), in which he has set down the extraordinary acquirements and duties of this old "horter," by stringing together, in such a way that they bear a double meaning, a long array of the names, popular and scientific, borne by plants. An alphabetical index is added, giving the explanation of the words which are parodied in the text. The attempt is amusing, though some of the allusions are a little far-fetched.

— WE have before us Nos. 1 and 2 of NEW COMMERCIAL PLANTS, by T. Christy, F.L.S., published by Christy and Co. No. 1 contains an account of the Liberian Coffee (*Coffea liberica*), African Rubber (*Landolphia florida*), Turkish Tobacco, and the Prickly Comfrey, all illustrated, the two former by large, well-executed plates. No. 2 contains *Gynocardia odorata*, the Chanlmugra, with plate; Vogel's African Rubber, (*Urostigma Vogelii*), with plate; *Bassia latifolia*, the Mahwah tree; and a brief note on the Cocoa (*Theobroma Cacao*). The text gives a description of the plants referred to, an account of their products, medicinal or economical, and such other information concerning them as may be obtainable, the whole forming a series of interesting chapters on the useful products of some of the little-known members of the vegetable kingdom. Mr. Christy is highly to be commended for making this information more generally accessible.

Obituary.

— WILLIAM ESSINGTON ESSINGTON, Esq., of Ribbesford House, Bewdley, died, after a lingering illness, on December 24th. By his decease we have lost an ardent horticulturist, one whose garden showed evidence of taste and practical discrimination. He grew all the better kinds of herbaceous plants; florists' flowers received care and attention; and Mr. Essington was amongst the first who encouraged the planting of the Clematis in masses, which has rendered that gorgeous flower so popular. Fruits of all kinds were specially cared for and studied by him. Of Pears especially he was fortunate in raising several superior varieties, including Autumn Josephine, a valuable acquisition, and several others, of which great hopes are entertained. Mr. Essington was one of the truest patrons of horticulture, and in him the science has lost a gifted member, and gardeners a genial and valued friend.

— MR. CHARLES J. HIGGS, for the past nine years gardener to Mrs. Crawshay, at Caversham Park, near Reading, died on December 26th, aged 36. Mr. Higgs for several years was in charge of the gardens at Crabwood, near Sonthampton, the residence of Mr. Rolles Driver, where he was enabled to display his energies in many and

varied improvements. He subsequently took charge of the gardens at Caversham Park, where he also made a good reputation, and was widely known and deservedly esteemed.

— MR. JOHN HOLMES died at Whittington Hill, near Lichfield, on January 4th, in his 81st year. He was related to Mr. Edward Holmes, of the Whittington Nursery, and was for upwards of twenty years a partner in the firm of Fisher, Holmes, and Co., of the Handsworth Nursery, near Sheffield.

— MR. THOMAS METHVEN, founder and senior partner of the firm of Methven and Sons, nurserymen and seedsmen, of Edinburgh, died on January 13th, in his 60th year. He was a native of Kennoway, in Fifeshire, served an apprenticeship as a gardener at Leslie House, under the Dowager-Countess of Rothes, and while still young commenced business for himself as a nurseryman. The great experience he acquired in matters connected with arboriculture and horticulture led to his advice being sought by the large landed proprietors of the country, in connection with the laying-out of their grounds. He was one of the founders of the Scottish Arboricultural Society and of the Scottish Horticultural Association; also an active member of the Royal Caledonian Horticultural Society. In 1866 he was elected Councillor for the Calton Ward, and continued to represent it in the Corporation until 1877, when he retired, but not before he had been elevated to the magistracy, a position which he enjoyed for four years, before he again returned into more private life. The nursery business is carried on by his family.

— MR. THOMAS SAGE (father of Mr. G. Sage, gardener to Lord Brownlow, at Ashridge), died at Camberwell on January 12th, in his 90th year. He was born at Calne, in Wiltshire, and began work in the garden at Bowood; while still young, he left, for the nurseries of Mr. Ronalds, at Brentford; he subsequently became gardener to Mr. Moss, at Drayton Green, near Ealing, where he remained for some years; and then entered the service of Lady Hazlerigg, at Hillingdon Heath, with whom he stayed twenty-nine years, and retired on a pension, in consequence of her ladyship giving up her country residence. For some years afterwards he was employed at the Crystal Palace.

— MR. JOSEPH DALE, gardener to the Hon. Society of the Middle Temple, died at Leyton on December 30th, in his 64th year. Mr. Dale was born on June 29th, 1815, and was in his younger days employed in Mr. Groom's then famous nursery at Walworth. He was appointed gardener to the Hon. Society of the Middle Temple in 1843. During the thirty-five years he had charge of the Temple Gardens, he gained and held the esteem of a very wide circle of friends; and was so successful in the cultivation of the Chrysanthemum, that some years ago he published a small book on the subject. In 1857, at a Special Parliament of the Bench of the Middle Temple, "it was ordered that a testimonial be presented to the gardener, Joseph Dale, as a token of the great satisfaction which his very successful show of Chrysanthemums has given to the Bench;" and it was only in February, 1878, that he was presented with a handsome timepiece and a purse of fifty guineas, "by friends who esteem his worth, and appreciate his labours in the cultivation of the Chrysanthemum."




W. H. Fitch, del.

G. Severeys Chromolith, Brussels

Rhododendron Marchioness of Lansdowne.

RHODODENDRON MARCHIONESS OF LANSDOWNE.


[PLATE 485.]

 HIS is one of Mr. Anthony Waterer's newer varieties of hardy Rhododendron, and it is certainly a very beautiful one, whether its lovely rosy colour or its rich spotting be taken into consideration. The form, both of the truss and of the individual flowers, is all that can be desired: the former being compact and sufficiently large—our page does not enable us to depict one of the largest—while the latter is broad, smooth, well expanded, and symmetrical. The colour is a rich rose, spotted heavily on the upper segment with black and crimson. The delicate ground-tint is very diffi-

cult to reproduce in artificial colours, and our figure should show rather less blue than M. Severeys has worked into it. The foliage, necessarily reduced in the figure, is naturally bold, and the habit vigorous and healthy.

Nothing need be said in recommendation of these fine hardy flowering shrubs, which are well appreciated, and without which our pleasure-gardens would lose half their charms, the characteristic evergreen foliage rendering them ornamental in winter, and the many-hued blossoms giving them a gorgeous brilliancy in the early summer months.—T. MOORE.

PERPETUAL-FLOWERING CARNATIONS.

 HESE useful flowering plants are becoming more extensively cultivated every year. The trade in the plants has become quite an important branch in the business of several of our leading nurserymen. The flowers are not only exceedingly beautiful and sweetly scented, but they can be obtained in every month of the year. From about four dozen of plants of different varieties, we have been able to keep up a constant supply.

A few remarks on their culture may be useful. We are now (February) taking off the cuttings for next season's supply of plants. The right way to propagate these plants cannot be widely known, as in conversation with the propagator of one of the large trade-growers I was told that they increase their stock by layering only. Now I never layer any of the true Perpetual-Flowering Carnations, but increase the stock from slips early in the year. Each plant will, at this season, be furnished with a number of side-growths. A sufficient number of these should be slipped off with the fingers, and be inserted at once in well-drained 4-in. pots of sandy soil. I use a compost of nearly equal parts of loam, leaf-mould, and sand, the loam very slightly predominating; the pots are then plunged in a mild bottom-heat in the forcing-house, where there is a minimum temperature of 50°. Nearly all the cuttings will form roots, if squares of glass are laid down flat upon the labels protruding from the pots. I find if this is not done, many of them shrivel, while in a close frame they are

liable to damp-off. When rooted, pot the small plants off into thumb-pots, or small sixties, if they are strong, and place the pots on a shelf near the glass, in the same temperature, until the roots run down the sides of the pots. Repot the plants as they require it, and gradually move them to a cool, greenhouse temperature. When the plants are about 6 in. high, pinch out the point of the leading growth. Some varieties will require to be pinched a second time, others it will not be necessary to stop at all after the first.

I grow the plants in cool frames until the end of May or early in June, when they are placed out-of-doors until September. Insect pests, such as thrips and green-fly, should be destroyed by fumigating before the plants are placed out-of-doors. One stoutish stick of painted deal should be placed to each plant, and as growth is formed the stems should be tied to this—the centre stem close to the sticks, and the others tied in just enough, not too close, else the natural habit of the plant will be altered. The stems are easily snapped by the wind, if they are not secured in good time.

When the plants are placed under glass in September, they must not be pushed into any corner, nor at a great distance from the glass. They will produce a few flowers during winter in a cool greenhouse or vinery, but they will be of poor quality. If, however, kept in a rather dryish atmosphere and a temperature of about 50° at night, with just a touch of air on even at night, if frost is not in-

tense, the plants will grow freely, and produce as perfectly developed flowers as at mid-summer. The side-growths continue to push up when the centre flowers fade, each growth producing flowers at different times—a characteristic which has given to this section the name of Perpetual.

There are a considerable number of varieties in cultivation now, and the list is enlarged annually. The very large full flowers do not open well in winter, and some of them have short calices, which split open before the flowers open at all. This is a fault which can only be overcome by a little attention on the part of the cultivator. I slit the calyx down a little at the apex of the segments, to allow the petals to expand; and further, it is necessary to tie the calyx round loosely with a strip of matting. This section seems to be of quite a distinct type from the ordinary varieties; none of them have the bizzarres or flakes so much esteemed by the florists, with the exception of *Gloire de Lyon*, which is a rose-flake, but is as often a self. The varieties most useful as cut-flowers are the decided colours, and it is better to grow only those that flower freely in winter and are good growers. One of the best is *Miss Jolliffe*, flesh-colour or pale pink; the plant is dwarf, and the flowers, which are very freely produced, have a calyx that does not split. *Annie Williams* is a very good rose-coloured flower, of taller growth. *King of the Belgians* is a bright rose, with fine large flowers. Amongst scarlets, *Grenadier* is very good and free-blooming; but it is surpassed by *Proserpine*, which has better flowers, and is as good in habit. Pure white flowers are perhaps the most valuable, and I believe *La Belle* is the most useful, the plant is of such free growth, producing well-formed flowers, which open well in midwinter. *Bride* and *Vestal* may also be grown, but I prefer *La Belle* for the main supply. Of varied colours, striped and edged, the following should be grown:—*Celestial*, rose-edged; *Empress of Germany*, large, almost white, marked with rose; *Mons. Baldwin*, marbled; *Souvenir de la Malmaison*, an immense blush; and *Gloire de Lyon*.

The yellow-ground flowers form a very distinct and desirable class of varieties. *Ascot Yellow* is good as a flower, but is of such poor growth as a plant that it is not to be

recommended. *Prince of Orange* is by far the best of this class, but it can seldom be obtained in flower until late in the spring, and so does not realise the character of the true Perpetual. I have great hopes of some valuable winter-flowering varieties to be obtained from the batch of seedlings raised by Mr. Turner, of Slough, from *Prince of Orange*, as some of those already exhibited possess properties quite new in this class; the flowers are very large, fine in shape, the ground-colour being of that clear yellow hue so noticeable in the parent; and the scarlet markings with which the flowers are edged, barred, and shaded are a pleasing characteristic of the whole of them. If they can be flowered freely at midwinter, it will be a great point in their favour. *A. Alegatière* is also a new type; the plants are very dwarf and compact, bearing bright scarlet flowers abundantly in winter.—J. DOUGLAS, *Loxford Hall, Ilford*.

KEEPING GRAPES “BOTTLED.”

IF I HAVE long thought that it might be worth the trouble to consider, and by some scientific as well as practical experiments to test, whether or not the wholesomeness of the Grape does not become deteriorated by the stems being long immersed in water. If the system has any advantage over the method I used to practise more than thirty years ago in keeping grapes plump and fresh, water must pass into the bunch. My method, at the date I refer to, was to cut the laterals off the vine with the bunch attached, and after allowing the end where it was cut to get dry, which happened in an hour or so, to sear it with a hot iron and seal it over with wax, after which the grapes were hung up in a dry but cool fruit-room. They were well ripened Muscats, were severed from the vines about the second week in January, and kept in fine condition till the middle of March.


I am disposed to think that when water enters the berries through the wood having its end inserted in a bottle of that liquid, it will dilute the grape-sugar and other elements they contain, and set up, under a slight rise of temperature, a sort of fermentation that must change the character of the fruit to some considerable extent, and not for the better. It may be replied that if the fruit keeps plumper on

the vine than when cut and hung up, that it must do so as the result of receiving supplies of sap from the parent stem. I grant this, but it does not follow that it is water, pure and simple, that it gets. In my opinion, it gets something that man cannot supply in any other way.

As bearing on the subject, I may relate a circumstance in my own experience, which goes some way to confirm my suspicions in this matter. I know a lady who has been many years an invalid, and who almost lives on grapes, nothing else doing her so much good. My supply came to an end, and when, on visiting a friend, I saw that he had a fine lot of grapes "bottled," I asked him for a bunch for her, and he gave me two. She received them with great pleasure and ate them as usual, but after consuming one bunch, she took quite ill, and said the grapes had disagreed with her. I disputed this, and as soon as she recovered to her usual state, I got her to try the second bunch, and it had exactly the same effects. She was not then aware that they had been "bottled." I have kept Grapes by sharpening the ends of the stems, and inserting them in mangold-wurtzel or beet-root, and found them keep just as plump and fresh as those "bottled," but I am not prepared to say if doing this will obviate the difficulty I suspect in the case of pure water.

I have come to the conclusion that, except for the sake of appearance, it is far better to keep Grapes without water than with it; and I think the question is worthy discussion,* seeing that the practice of "bottling" Grapes is extending.—WM. THOMSON, *Tweed Vineyard*.


NOTE ON STRELITZIAS.

 HIS genus of very splendid plants is too rarely met with, seeing that it may be cultivated in a cooler atmosphere than that in which it is usually found. There are several species, and *S. reginae* is worth growing in every garden. The one commonly grown under this name in this country is tallish. Another of dwarfer habit, which has the best and finest flowers, is seen mostly in Continental gardens, but rarely in this country. I made its acquaintance in Paris, and whether

I am right in describing it as a dwarf *S. reginae*, or it be another species, I will leave for others better acquainted with the genus to decide. Whatever its name, it has very brilliant-coloured orange and blue flowers, most vivid in colour.

I have several plants in 8-in. pots, flowering with one stem. It was one plant last year, but I divided it, and each sucker has a good flowering stem, which is longer than the leaf, throwing up the brilliant inflorescence higher than the rest of the plant. This is not so in the ordinary type, for as far as I remember from seeing it flowering here and there, the leaves are much longer than the flower-stems. [Probably yours is *S. ovata*.] I grow my plants drier and cooler than some, which may account for their being dwarfer to a certain extent, but I am inclined to think I have a different kind from the ordinary type.—H. KNIGHT, *Floors Castle*.

THE ROMAN HYACINTH.

 HE early-blooming small-flowered Hyacinth, so useful for early forcing, which has come into fashion of late years, has not been cultivated here, at least on a large scale, till within the last dozen or score years. As some interest has been excited in the history of these plants we (*Gardeners' Chronicle*) supply what information we have been able to glean on the subject, leaving, as will be seen, some gaps still to be filled up. Our first inquiry was of M. Krelage, of Haarlem, who tells us that to the best of his knowledge, the Roman Hyacinth was in cultivation in Holland forty to fifty years ago, rather as a curiosity than as an article of commerce. In Germany, on the other hand, there was a regular sale of the bulbs, though not to a large extent. M. Krelage, who in 1839 directed a branch establishment of his firm in Frankfort, used regularly to import from Holland several hundreds of these bulbs, so as to supply flowers for Christmas. For this purpose, they were grown three in a pot and forced. M. Krelage's firm was the first, we believe, who dealt largely in Roman Hyacinths for foreign exportation. M. Krelage further tells us that the plant is probably a native of the South, perhaps Italy. If planted in the open ground in northern climes, the bulbs gradually produce fewer and smaller flowers, and these are produced later and later, the bulbs themselves becoming larger. In Vilmorin's *Fleurs de Pleine Terre*, mention is made of Paris Hyacinths, which, it is stated, only differ from Dutch Hyacinths, of which they are probably varieties, in being hardier, and having less dense spikes of bloom.


* Will some of our readers state the results of their experience on this important question.—ED.

Among these Paris Hyacinths two varieties are noted—one *Blanc de Montagne*, the *Hyacinthus albulus* of Jordan; the other, *Romaine Blanche*, the *Hyacinthus præcox* of Jordan. The Paris gardeners plant the bulbs in small pots in August and September, and begin to force them about the first fortnight in October, to have them in flower on the *fête* of St. Charles, November 4th. In Jordan and Fourreau's splendid *Icones ad Floram Europæ* may be found a good figure of the Roman Hyacinth, under the name of *Hyacinthus præcox*, with a botanical description and an indication of the native

country, Liguria (Genoese Riviera). We do not find the plant mentioned, however, in any Flora of that region. *H. albulus*, which is very nearly allied, is figured also, and is said to grow wild in the South of France, at Grasse. It would seem, then, that the Roman Hyacinth originated from one or the other of these two forms, growing wild along the shores of the Mediterranean, but how it got its name of "Roman" is not so clear. Mr. Baker (*Journ. Linn. Soc. London*, xi., 426) refers both these forms to *H. orientalis*, of which they are the Southern representatives.

VINES AND VINE-CULTURE.

CHAPTER XVI.—STRUCTURES FOR GRAPE-GROWING.

S regards Structures or Houses for the cultivation of Grapes, the greatest latitude may be allowed. Vines are most accommodating in this respect, and will grow in structures of any form or size that either convenience or fancy may dictate, provided the atmospheric conditions are suitable. It is not to be assumed, however, that certain structures are not better adapted for their respective requirements than others. It is the little differences or deviations from this or that line that lead on to failure or success, as the case may be. The two extremes are seldom far apart. The conditions that may prove satisfactory in one sense, do not always avail in others. The mere growth of the vine itself is one thing, whilst the production of fruit early or late, and its proper maturation and conservation, are quite other matters. A house which may be very suitable for early grapes, may be unsuitable for late crops, and *vice versa*. It is very wonderful sometimes to notice the great crops of grapes, and these of fine quality, that are produced in houses or vineries that can scarcely be called suitable, and which should never be taken as examples to follow in the erection of vine-houses. A great many blunders are committed in this way: because a certain thing is a success—from pure accident, it may be—it is copied, with all its faults, and failure is the natural result.

Vineries, that is to say, the structures set apart for Vine-culture, are of three classes:—

1. *Early Vineries*, for the production of early or forced grapes.
2. *General-crop Vineries*, including all unheated houses.

3. *Late Vineries*, for the production and proper keeping of grapes till late in the season.

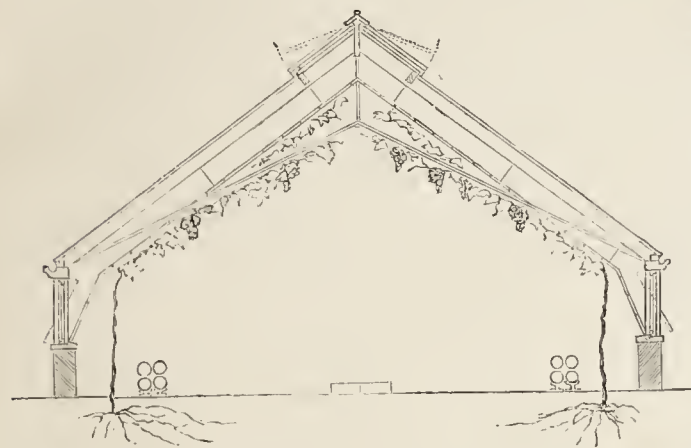
A vinery specially designed for one of these purposes may be very unsuitable for the others; special arrangements are required in each case, but we can here do little more than glance at general principles, leaving the details to be filled for each particular case.

The illustration which was given at page 2, in which the construction of the border is illustrated, represents what is termed a "lean-to" vinery, that is, a house leaning to or against a wall. This is the oldest, simplest, and cheapest style of house that can be erected, advantage being generally taken of some already existing wall against which to place it. The Vines in this case are planted along the front, and the rods trained up under the roof. A second set may also be planted against the back wall, and these will produce good fruit for a time, or so long as they are not shaded by the others. Lean-to houses are generally erected to face the south, so that the full benefit of the sun's rays may be secured. This position for early houses is a great consideration, but for later houses it is of less consequence, as good black grapes may be grown in houses having a due north aspect. For early forcing, the lean-to vinery is the most approved. It is naturally warmer, the back wall affording considerable shelter, and on this account it is the best adapted for cold or exposed localities. The figure given represents a house about 15 feet in width, with a roof at an angle of 40°. This may be made much more acute, and the whole modified as may seem desirable; but very steep lean-to vineries are extremely

sensitive, and require great care in ventilation, to prevent a too rapid rise of temperature, and consequent scorching of the vines.

We add on p. 38 a figure of what is generally termed a three-quarters span or hipped roof

vinery. It is a combination of the lean-to and span-roof, and unites to a great degree the advantages of both styles. For general purposes there is no better form of vinery than this, and it admits of easy and thorough ventilation by the short lights at the back, without in any way interfering with the front roof of the house. The vines in a house of this sort are planted as recommended for the lean-to vinery, and the best aspect is as nearly due south as possible. For muscat grapes requiring a considerable amount of firing, a high temperature, and plenty of sun-light, the three-quarters span is greatly to be recommended, as it is also for late-keeping grapes.



SPAN-ROOFED VINERY.—SECTION.



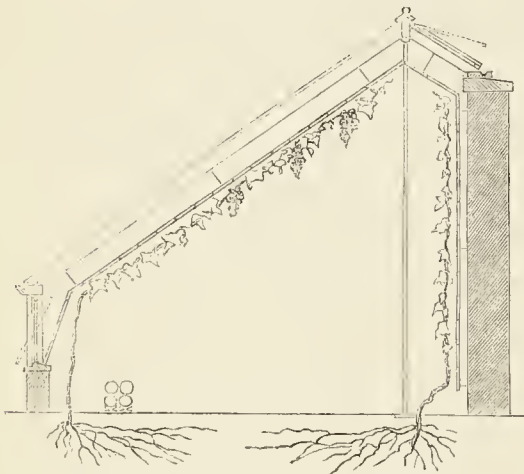
SPAN-ROOFED VINERY.—PLAN.

We also give a representation of a span-roofed vinery, so called from the roof forming a span or arch. This style of structure has become extremely popular since the days of cheap hothouses. It is the most elegant and ornamental, especially in isolated positions. There is no other form of vinery nearly so pretty, or one which affords so much roof-space for the development of the Vines. For the general cultivation of Grapes, the span-roofed vinery answers extremely well. The whole being glass, the amount of air and light admitted is very great, and this is decidedly beneficial to the vines, at certain seasons. The disadvantages are that, having so large a glazed or cooling surface exposed, it is much more difficult to maintain a high or regular temperature in a house of this form. On this account, span-roofed houses are not well adapted for early forcing, or even for keeping grapes very late.

In regard to position or aspect, the rule for span-roofed houses is the reverse of that recommended for the other forms of house. The best and greatest results are here obtained by placing the ridge due north and south, the one side thus facing east, and receiving the benefit of the morning sun, whilst the other is due west, and receives in like manner the afternoon sun, the direct or mid-day sun striking somewhat obliquely on both sides. Thus both sides receive about an equal amount and a

much longer continuancy of the vertical rays of the sun, than could be secured by adopting any other position. In the case of a span-roofed house, being so placed that the one side faces south, the other must then be due north; under such circumstances the vines on the south-side receive all the benefit of the solar rays, and those on the north are consequently shaded—and vines never succeed in shade. For more northern or colder localities, a more acute or steeper angle of roof is recommended.

The ground-plan shows the vines planted at 4 ft. apart on each side, and indicates the position of the pipes, trellis paths, &c., in a span-roofed vinery.—A. F. BARRON.



HIPPED-ROOFED VINERY.—SECTION.

GLADIOLI IN THE FLOWER GARDEN.

GAUDY and highly ornamental as are these popular flowers, they are not well suited for grouping in flower gardens when a display of blossom is required through the summer and in the early part of autumn, without having a ground-work of something else to make a show, and compensate for the late period at which the *Gladiolus* expands its flowers. For several years past we have used here different sorts of annuals, which may be grown between the Gladioli, to cover the surface, without being in the least detrimental to them: only when adopting this plan, it is necessary to plant the Gladioli a little wider apart. *Nycteria selaginoides* and *Nemophila insignis* are well adapted for beds of small size. For those of larger size, and required to be effective in the distant view, we have used the branching Larkspur, carefully mixed in planting; these

flower well all through the autumn, and blend in well with the rich colours of the Gladioli. Our plan is to sow early in heat, keeping each sort by itself, and prick them out at the bottom of a south wall until the time of bedding out arrives. Last year we had a bed planted with *G. Bowiensis*, having a ground-work of Golden Viola, edged with the Viola called *Admiration*, a dark purple. The contrast was very effective, especially at the time they were all in flower. We find the above-named variety and *G. brenchleyensis* succeed better here than the new hybrid varieties, which commonly go off by disease before the time of flowering.—J. WEBSTER, *Gordon Castle*.

CANKER IN THE APRICOT.

IF all fruit-trees for open-air culture in our English climate, the Apricot is the most difficult and precarious to keep in good health for any length of time, more especially in this northern climate, where it is so subject to canker and ultimate decay. Various reasons have been assigned for the dying-off of branches and ruin of the trees, but no real remedy has been found; yet in choosing the situation, much might be done to mitigate some of the evil. Thorough drainage is always necessary, and the soil should be a good, rich, sandy loam; clay should always be avoided. If the subsoil is a tenacious clay, a concrete bottom should be made, to prevent the roots going into it, which they do in a hot summer, in search of moisture, and this would most probably be the beginning of their decay. A warm situation is the home for the roots of the Apricot. The trees do well when they are planted against a dwelling, more especially if they are planted directly at the back of the fire-place, where the soil and roots never get frozen. Apricot-trees planted in such situations have come under my notice that have borne good crops of fruit for upwards of forty years, without losing a branch from decay.


When walls are heated for Apricots, advantage should be taken that the fires should have some influence on the soil, as this is certainly the best preventive of decay in the branches. Great care should be taken to prevent the nails coming in contact with the bark, as this will cause gumming, and then death to the branch. Canker or gumming should be well looked after,

and when detected, it should be operated on without delay. The decayed part of the bark should be clean cut out, and the wound covered with grafting-wax, or neatly tied up with cotton wadding, to prevent the air getting to it. I have saved branches innumerable and often trees by this operation, as the Apricot is very subject to canker in our cold, heavy soil.

In pruning, the spurs should be kept as close to the wall as possible; the best fruits, and the first to ripen, are those lying in contact with the wall. Summer pruning should always be attended to. I noticed in a contemporary recently a well-known writer recommending the summer shoots to be left on. I think if the writer had our northern climate to contend with, he would be of a different opinion. Fruit covered up with leaves, unless in a hot, dry season, seldom or never ripen fit to be eaten. It causes another evil—it draws the spurs too far from the wall, and makes the spurs too coarse for good fruiting.

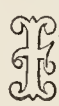
The sorts to be grown in the North are very limited in number, none hardly being worth growing except the Moorpark. The Turkey Apricot rarely ripens on the cold wall, and the tree is very tender and subject to canker in the large branches. The Breda, in some seasons, bears well, but the fruit is small, and only fit for preserving. Here we have given up growing it altogether, and grow nothing but the Moorpark. — WILLIAM CULVERWELL, *Thorpe Perrow, Yorks.*

CAMELLIA MADAME AMBROISE VERSCHAFFELT.

 HIS beautiful Camellia, with flowers of a delicate rose, spotted and striped with carmine, should be in every collection of any extent. The blooms are large, and of fine form. The plant is of a handsome erect habit, and although ours is not a large plant, we find it to be always a profuse-flowering variety, making a good pot-plant, on account of its close habit of growth. To have the flowers fine, however, the plants are best put out in a properly prepared bed. We find them do very well in a light, sandy loam, the turfs not being cut too thick, chopped up and mixed with charcoal, using only a little sand when planting a fresh plant. When the flowering season is over, the old loose soil is all taken off, and a

dressing of cow-manure laid on the surface, both in the case of beds and pots. They all then get a good watering, and after standing for a day, are dressed over with fresh loam, occasional waterings being given throughout the summer, sometimes aided by guano and soot. The last has a wonderful effect in making the foliage of a beautiful green, besides acting as a manure to the roots.—A. H., *Thoresby.*

READ'S SEEDLING AURICULAS.

 N May last, Mr. John Read, formerly of Market Rasen, and now of Lincoln, sent me a few pips of his Seedling Auriculas for inspection. It was a little late to have the pips in the best condition, but there was sufficient character about them to show that they all possessed promising features, and a few of them are likely to make a name for themselves, by-and-by.

Mr. Read is favourably known to Auricula cultivators as the raiser of a good red self named *Ruby*, a variety possessing several excellent qualities, and likely to be very useful as an exhibition variety; also *Dr. Horner*, a good grey-edge, which will prove an acquisition when it can be got into good size. A small pip of *Dr. Horner* came with the batch of Seedlings, and though past its best, the dense character and purity of the paste was a prominent feature. *Ruby* is a good grower, and produces a fine and telling truss of flowers.

Of new grey-edged flowers raised by Mr. Read, *Sultan* was a very promising variety; pip large and bold, large, finely-formed smooth segments, clear white paste, good tube, and black body-colour, showing a little tendency to run out in the pips sent; but this could be rectified, no doubt, by good cultivation. Another grey-edged seedling was *Victor Emmanuel*, a medium-sized well-formed flower, fine tube, dense pure paste, and dark body-colour, the tube inclined to be over-large; else a well-proportioned flower, and certainly promising. An unnamed seedling, No. 6-11, was of very large size, a little weak and angular in the tube, paste thin, but with a great breadth of body-colour running out into the edge. In the hands of a skilful cultivator it might yet prove to be valuable, the pip being stout, solid, and of good form. Another grey, No. 5-6, was some-

thing in the same way, but decidedly stronger in the tube, which was of good form and colour.

Green-edged *John Cunningham*, named in *memoriam* of this sterling Scotch florist, was a faint grey, good circular tube and fine paste, but with an undue preponderance of body-colour; the pip was, however, an almost exhausted one. It is a variety well worthy a good trial.

Of the white-edged flowers, *Regularity* was very promising, and was named probably because of its distinct and regular markings. The youngest pip had a rich golden tube; paste pure, dense, and smooth; body-colour black, laid on with remarkable regularity, and with a broad white edge. *Cleopatra* was represented by a fine and well-proportioned pip, good golden tube; paste smooth and dense; black body-colour, breaking into the edge; good form, and promising. I may add that *Regularity* was raised from Ashworth's Regular crossed with Smiling Beauty, and Mr. Read thinks it will make one of his best flowers.

Mr. Read has a seedling Self of a beautiful velvety-crimson colour, which I have not seen, but which he thinks will come out fine in course of time. It is a seedling from Ruby, crossed with Lord of Lorne, and has been named *Earl of Beaconsfield*.—R. DEAN.

INDOOR BERRY-BEARING PLANTS.

SOLANUMS AND CAPSICUMS.

NEXT come the Solanums, which are so serviceable and extensively grown for their useful winter decorative qualities. For every purpose they do best planted out during the summer months, and will grow in any ordinary garden soil, which may be dressed with fresh loam, choosing a fully exposed situation. There are several forms of the Solanum, of which *S. Capsicastrum* and *S. Pseudo-Capsicum* are the types, between which there are hybrids, all possessing more or less merit, so that each grower may make his own selection. Standards are best grafted upon the stronger varieties, or they may be trained to form stems, by encouraging a leading shoot until the desired height is attained. After the berries are exhausted, the plants should be cut in freely and started into growth, when such plants as are in large pots should be shaken out, trimming back the roots, and repotting them in smaller

ones, active growth being afterwards encouraged. When treated thus, the plants are more manageable, and lift with more certainty than they do if planted in the old soil.

Seed should be sown early in the season and the plants encouraged by rich compost, keeping them near the glass in a close pit, to secure sturdy strong growth by planting-out time, for without this is insured, they seldom produce that profusion of berries in small pots which is so desirable for this class of plants.

Although these Solanums are not affected by a degree or two of frost, they are better lifted by October, and should then be placed in a shaded situation until they establish themselves. They should be brought forward in cold pits or the greenhouse, giving a little manure-water occasionally, with an abundance of air. They dislike much heat at this stage. A yellow-berried variety of the *S. Capsicastrum* is a great desideratum, for although we have yellow Capsicums of superior merit, they altogether lack that freshness of foliage and general aspect presented by the Solanums. The Prince of Wales is the best yellow-coloured Capsicum we have, and is well worth growing as a decorative plant. This, unlike the Solanum, must be grown in pots throughout the season, and be kept in heat. It is raised from seeds annually, and requires potting in good rich soil in 6 or 7-inch pots, which are amply sufficient, as medium-sized well-berried plants are the most useful.

The above are amongst the most valuable berried plants we can grow for winter decoration, and are doubly valuable on account of the time they last in condition.—GEORGE WESTLAND, *Witley Court*.

HOW TO AVOID THE POTATO DISEASE.

THERE is a method of Potato-culture made easy, and of saving the crop from disease. It is a well known fact that light sandy land is the best for growing Potatos; and the mode is thus:—Well manure the land in autumn, and plough it deeply. I have no faith whatever in any kind of chemical manure, but use the real thing, good farm-yard dung. Let the ground lie up rough through the winter, and about March 1st, if dry, plough it again crossways, and then with a Kentish potato-dibber



W. H. Fitch, del.


Apple.
1. Oslin. 2. Early Julien.

G. Severeys Chromolith, Brussel

plant the Potatos—York Regents, Paterson's Victoria, Scotch Blue—leaving all the fancy 2s. 6d. per lb. novelties for those that can better afford to plant them. Attend to hoeing and general cultivation, and as soon as the Potatos are fully grown take them up at once, and spread them to dry in sheds before storing. You will find by doing this you will have a good return. This, excepting the selection, was Edward Luckhurst's advice to me three years back, and I have proved its value.—R. GILBERT, *Burghley*.

EARLY APPLES.

[PLATE 486.]

ONGST the many early dessert Apples, there are perhaps none better known, and few more relished, or of higher merit, than the OSLIN (Fig. 1.) More especially is this so in Scotland, which seems to be its adopted home, for there its qualities are superior even to what we find them in the south, where, however, it is also much prized. The Oslin is a very old Apple, and one of a very distinct character, which can scarcely be confounded with any other. There is no very authentic record of its origin, but it is supposed to have been introduced by the monks of Arbroath from France; and this is very likely to have been the case, as there are evidences of many fruits having been introduced by these people; still, it is strange that no trace of this name or of this apple can be found in any French list of fruits. Like most good fruits, the Oslin enjoys many synonyms; amongst others, it is often called Arbroath Oslin, Arbroath Pippin, Scotch Oslin, Summer Oslin, Mother's Apple, Burr-knot, Orglon, Orgeline, &c.

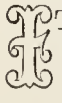
The fruit may be described as of medium size, flattish—frequently more so than our figure represents—or roundish oblate in shape, very evenly and regularly formed; eye large, open, prominent; stalk short, inserted in a slight cavity. Skin rather thick, pale yellow, and strewed with brown dots. Flesh yellowish, firm, very rich and sprightly in flavour. In warm seasons it is apt to be somewhat dry, and at other times it is liable to crack, often to a great degree. In use during September. The tree is of free growth, of erect habit, with large, broad leaves, somewhat liable to canker as it grows old, and the branches are frequently

covered with knobs or burrs, from which roots are readily formed, on their being placed in the ground.

EARLY JULIEN (Fig. 2).—This is a very excellent early Apple, generally relegated to the kitchen; but it is really a very good dessert fruit. It is not quite so captivating in appearance as many others, but in quality it is unique. The peculiar brisk aromatic flavour of the flesh, and its crisp freshness, render it extremely pleasant on a warm day in August, when juicy fruits are scarce. Dr. Hogg, in the *Fruit Manual*, compares it to the Hawthornden for all its good qualities, and indeed it might be called a summer form of that variety.

The fruit is of medium size, roundish and somewhat angular. Skin smooth, pale yellow, having frequently a tinge of orange on the side next the sun, and strewed with whitish dots. Eye large, the segments broad, closed, set in an irregular basin; stalk short, set in a deep cavity. Flesh yellowish-white, crisp, juicy, brisk, and pleasant. It comes into use early in August, and is much esteemed for cooking. The tree is a free grower, and succeeds well on the Paradise stock as a dwarf.—B.

ON JUDGING THE AURICULA.


T is now a good many years since I was a grower of the Auricula, though I still have a regard for them, and nothing gives me greater pleasure than to visit an exhibition of these beautiful spring flowers. When at the National Society's (Northern Section) Exhibition last spring, I noticed one or two errors of judgment, on which I fully expected that some one of more authority than myself would have made some remark.

Notably among the green-edges, a *Trail's Anna* was awarded first honours, though it was anything but a good flower, the body-colour in every pip of it striking through the green to the very edge of the petal. *Prince of Greens*, which was placed second, was, in my opinion, a far better flower, even and regular in its marking, possessing only one fault—a pale tube—which was of far less moment in my estimation than a broken body-colour.

Among the white-edges, first honours were awarded to *Smiling Beauty*, as perfect a grey as I ever remember to have seen; in fact, I could


see no white about it. There is no doubt that the flower was the best in the class, only it ought to have been exhibited in the grey-edges, instead of the white. For my part, I would have the white-edged class—as long as there is a class for that colour—to consist solely of whites, rejecting any flower which shows a tendency to greyness. My experience of *Smiling Beauty* is that it is far oftener a grey than a white, but still I have no objection to seeing it in the white edges, provided it is white. As the time is fast approaching when the national shows of this earliest and oldest florists' flower will be held, and no one having said anything on this subject, I trust I shall not be out of place in calling attention to the subject.—GEORGE RUDD, *Undercliffe, Bradford.*

SALT-WATER AS A PRESERVATIVE.

HE note at p. 31 of the FLORIST AND POMOLOGIST reminds me of an interesting evidence of the possible uses of salt-water, in respect of which I ought long ago to have made some remark in the public interest.

Twenty years ago, a lady sent me, for deposit in my museum, a tuft of sea-weed, taken from the "Sargasso" or "Weedy Sea" of the Atlantic. The tuft consists chiefly of *Sargassum bacciferum*. The vessel containing it is an Indian chutnee-bottle, which is stopped with a common bung. The sea-weed is preserved in some of the water in which it grew, and to this day is as perfect as when taken from its steaming bed in the Gulf Stream. Surely salt-water must be a grand preservative, and none the less to be prized for its cheapness.—SHIRLEY HIBBERD.

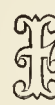
FREE-FLOWERING CAMELLIAS.

HAVE before invited attention to the *Camellia Jardin d'hiver*, as being a very fine free-flowering dwarf kind, with rosy-coloured flowers. It is, moreover, a very early one, naturally so, which is a great point in its favour. It flowers with us very early, opening simultaneously with the old Double-striped. It is a finely formed imbricated flower, as beautifully formed as the old Imbricata itself, and of a much more beautiful and pleasing colour.

Camellia Comtesse Calini is a pure white

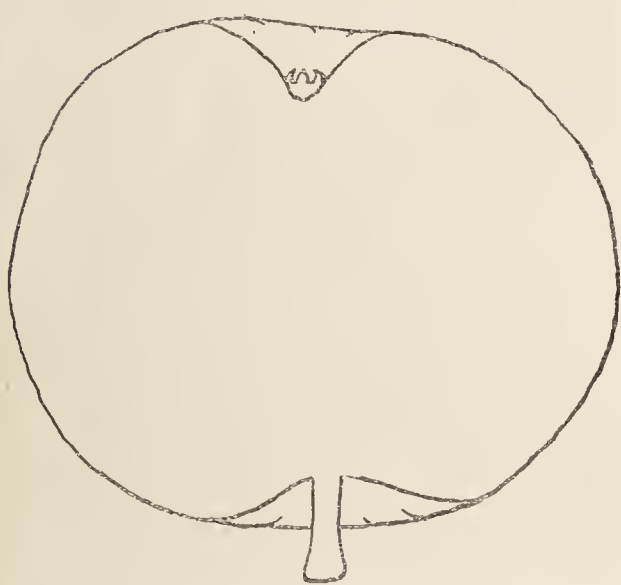
small-leaved, free-flowering, useful sort. The flowers being much smaller than other whites, it is a very useful variety for cutting. One may compare it to *Eucharis* in size, and hence it is adapted to many more ways of decoration than the old Double-white or others. *Camellia Il Cygno* is another very beautiful imbricated white, of perfect form and fine substance, which should be in every collection mostly. As we have a very large collection of Camellias here consisting of nearly all the new and newer kinds, which were got from M. Ambroise Verschaffelt before he gave up his business, and of which he sent me good large plants, I am in a position to form an opinion of their various merits or demerits, and may refer to them at a future time. [Please do so.] —HENRY KNIGHT, *Floors.*

EARLY CABBAGES.

T is not often that Cabbages are sown under glass, as it is only in exceptional seasons like those of the present year that it answers the purpose; but I am of opinion that if done at once it will pay well, as thousands may be raised in a very small space. A few old lights and a board or two, placed on a warm border where the soil is naturally light and dry, will afford the best accommodation for sowing where large quantities are required, as there they may stand till large enough for planting without further handling. In gardens, however, where only a limited number would be wanted, and where labour and time are not so much an object as a regular supply for the kitchen, a few pans or boxes sown and stood in gentle heat till the seeds germinate, and afterwards nursed on near the glass in a cold frame, will come in valuable, and be far ahead of any less favourably circumstanced. These, pricked out by-and-by in a sheltered situation, and finally planted, will go on without check, and turn in with firm hearts, of fine flavour, rich, juicy, and succulent, in which condition I know of nothing to be had in the vegetable way that will equal them, or that is more nutritious and wholesome.

In order to grow them possessing these fine qualities, it is essential that the land in which they are to be planted should be highly manured, as a crop that comes to maturity so quickly and produces so much food must

of necessity take much from the ground ; and Cabbages that are half-starved soon get the “blues,” when they at once become stringy and tough, to an extent that no amount of boiling or skilful cooking can rectify. By trenching the soil and giving it a good dressing of rotten dung at once, it will be in fine condition for the plants by the time they are large enough, for what frost we may get now, and the air combined, will sweeten and pulverise it, besides helping to rid it of insects. A dressing of soot dug in helps wonderfully in effecting this, and is an excellent fertiliser as well, as is also a sprinkling of salt with it ; but when this is used thus early it should be with a sparing hand, as the plants will not bear so much as they will later on.—J. S. (*in Gardeners' Chronicle.*)



DUTCH MIGNONNE APPLE.

THIS useful variety of Apple is noticed in some fruit lists as “a large kitchen and dessert kind,” but I have grown it many years and found the fruit to be only of medium size, like the accompanying outline figure. It is a great bearer, both on young and old trees, these being in consequence of a bushy habit, thus taking up less room than those of more rank-growing sorts. The fruit is green, tinged with yellow and dull red, thickly studded with dots on the sunny side, and in some seasons partly of a russet-colour. It keeps good and crisp till the middle of March.

Those acquainted with apples may judge if my notice of the Dutch Mignonne is correct, because, as hinted, one cannot always be guided

by descriptions of fruit in catalogues, however much pains may be taken with them, for even good judges are at times mistaken. For instance, I may here note that some years back I sent a collection of apples to a fruit-show in London ; among them were two dishes of the Aromatic or Spice Russet, both from the same tree ; those forming one dish were picked from the top branches exposed to the sun, and had rosy cheeks : the other, from shaded branches below, were dull russet-colour, and much inferior in flavour. This led the judges astray, indeed so much so, that they said the first dish was correctly named, but not the other. I mention this little incident merely to show how fruit varies in character and quality, according to the effects of the sun. In the case cited, both eye and palate were led astray, because the effects of the sun's rays on the texture of the leaves which supplied the proper nutriment to the fruit, was not appreciated.—J. WIGHTON, *Cossey Park.*

NEW POTATOS AT CHRISTMAS.

AMONG the many highly esteemed early Vegetables, including Mushrooms, French Beans, Asparagus, Seakale, &c., none are thought so much of as genuine new Potatos ; and the very easy manner in which they may be got, is a fit subject for notice in your pages.

To have New Potatos at Christmas is indeed nothing new. I have for many years planted old tubers, and gathered good crops from them, but these have at best but a watery flavour, and are not relished. Potatos in pots are also grown extensively among the rich ; but I have never taken up a crop out of pots that was satisfactory. I therefore, last April and May, when lifting the frame Potatos for table, selected a quantity of them for seed, storing them on a dry, but a dark shelf. In August, I had a nine-light pit, which had been used for carrots and other vegetables, prepared, by merely putting two barrowsful of light soil or old mushroom-dung into each light, mixing up the old material with a steel fork, and levelling all nicely. I then planted these small, forced Potatos—which were well sprouted, putting on the lights forthwith, but each light having a brick underneath, both back and front,

for ventilation, and also to keep away disease—for I have proved to my satisfaction that glass will do this. They were soon up and doing, and when nine inches high, I earthed them up, giving them a thorough watering first. I always use, for earthing-up my frame Potatos, old mushroom-dung and sand, well incorporated together. Here, with an occasional watering, they stop until Christmas, and the tops keep quite fresh; but this season, in consequence of the severe weather, I took off the lights, and filled the frames inside with bracken, to ward off the frost. I lifted the first dish of Potatos, 6 lb., on December 16th, and our *chef* pronounced them the only genuine new Potatos he had ever cooked at that season. They peel quite easily, and are perfectly white—in fact, they are new Potatos, pure and simple. My employer thought so much of them, that after the first night's supply, when they were served during the first course, he requested the *chef* to send them up thereafter as second-course vegetables.—RICHARD GILBERT, *Burghley House Gardens*.

PRIMULA CULTURE.

I HAVE about 100 plants, in 6, 7, and 8-in. pots, which promise to be very good. [They were a very fine sample of good culture.] I measured some flowers both of alba and rubra, and found them to be exactly 2 inches in diameter, finely fringed and beautiful in colour. These are from Mr. B. S. Williams' strain; but there are many other strains supplied by our best seedsmen which will produce such flowers as these, if properly treated. The method I adopt is very simple, and as follows:—I well drain 6-in. pots, and fill them to within 1 inch of their tops with soil, consisting of one part loam, one part leaf-mould and silver-sand; the pots are well watered with a fine rose, the seed thinly sown, and just covered with silver-sand. A piece of glass is placed on the top of each pot, and they are then placed in the plant-stove on a shelf near the glass, and kept constantly moist, and shaded from the sun in the middle of the day. As soon as the seedlings are ready, they are pricked into pans an inch or so apart, and from these are transferred into 4-in. pots. As soon as the roots reach the sides of the pots, they are shifted to the flowering-pots, which are 6, 7, and 8-in. The soil used is one part loam, one part leaf-mould, well rotted manure, silver-sand, wood-charcoal, and a little bone-dust. The plants are then placed in a warm pit near

the glass, and watered carefully, as well as sprinkled once a day with a fine rose in bright weather. The plants are at all times allowed plenty of room, to prevent a spindling growth, and by this treatment we have nice plants, well furnished, and from 1 ft. to 2 ft. across. The time I like for sowing is March, April, and May, as this gives a long succession of bloom.—G. ELLIS, *Denzell Bowden* (in *Gardeners' Chronicle*).

VILLA GARDENING.

March.

THE change in the weather, from the wildness and fierceness of winter to something so pleasant and genial, is such as to have led Villa Gardeners to exclaim, "Lo! spring is here," and to anticipate much enjoyment in their gardens as a result of the change. Probably the wintry forces have well-nigh exhausted themselves, after the prolonged effort they have put forth of late; and though frosts and rude winds may be looked for, probably nothing more in the way of frost of any particular severity of character will happen.

Greenhouse.—By this time, villa gardeners who were deficient in heating-power have been able to calculate something of their losses. Many plants have died, more from drought than from frost. It was unsafe to water them while the frost lasted, and as anything like a thaw was of but very short duration, the roots became almost dried up for want of moisture. The best thing to be done is to thoroughly overhaul the plants, putting aside for throwing away those that are dead or nearly so, and cutting out of plants that have the tips of the shoots killed back all the decayed portions, in the hope that the living parts will break into a healthy growth. As a rule, villa gardeners who have a greenhouse are fond of growing a lot of things, and especially of bedding plants. Those who are in the habit of propagating these in some part for themselves, having the convenience of a little heat, should proceed to work at once, that what they require for bedding-out may be well established by the time they are wanted. It is usual with these to keep many things, such as *Pelargoniums*, *Verbenas*, *Heliotropes*, *Koniga*, *Calceolarius*, &c., over the winter in boxes; and also stock plants of *Fuchsias*, *Petunias*, &c., in pots. The great difficulty generally is to find room for many of the former, such a quantity is wanted in spring. If the former can be potted off singly into small pots, so much the better; if they cannot, they should be replanted in other boxes, so as to have sufficient room to grow and get newly established by May. If the stock plants be put into a gentle heat, they will begin to grow at all the points; and these young growths

make nice cuttings, and if put into a sandy soil in pots and pans, and placed in some moist heat, they will soon strike. If the villa gardener trusts to his spring-propagated plants to give him what he wants for his flower-beds in summer, the sooner he can get to work the better. Amateur gardeners who have to provide a goodly number of plants, and to whom quick production is an object, should grow a few of the *Dwarf Nasturtiums*, such as *Beauty of Malvern*, *Luteum improved*, *Lustrous*, &c. Stock plants of these, when excited into growth, furnish a great number of cuttings, and quickly root. About the middle of the month some useful half-hardy annuals may be sown in the hot-bed, such as *Zinnias*, *Phlox Drummondii*, *Balsam*, *Asters*, *Stocks*, *Rhodanthe*, &c., pricking-off the plants as soon as large enough, and growing on into size as quickly as possible. Most greenhouse plants will now be making an advance in growth, and will require a more liberal supply of water. Plenty of air should be given, when the weather is mild and pleasant. Now is a good time to clean the glass and shelves of a greenhouse, ready for spring. Cleanliness and light are important conditions affecting the well-being of plants.

Cold Frames.—The occupants are now becoming very interesting. The great advance which betokens the rapid on-coming of spring has already commenced, and movement is the order of the day. *Christmas Roses* in pots and *Primula purpurea* are the two first to put in appearance. The former have not had the soil changed in which they are growing, but are having a slight surface-dressing of Clay's Fertiliser, which, washed into the soil with water, is greatly helping the plants. Some gardeners complain they cannot succeed with *Christmas Roses* grown in pots; perhaps, because they shift them every year. *Anemone fulgens*, *Triteleia*, *Primroses*, *Polyanthuses*, *Aquilegias*, and lots of other things, are getting active; and they will be helped by a surface-dressing, taking away any old sour soil, and adding something fresh, sweet, and good. Advantage should be taken of a fine day to take the pots from the frame, brush and clean the inside walls of it, loosen the bottom and add a slight layer of fresh ashes; and on returning the pots; stand them a little wider, so as to give space for the advancing growth of the plants. As soon as any good things show flower, they can be taken to the greenhouse, to assist in making that gay.

Flower Garden.—Beds of spring-flowering plants, having had any losses through the frost made good, should have their surfaces stirred, and top-dressed with a little fresh soil. *Antirrhinums*, *Pentstemons*, *Stocks*, and *Wallflowers* have suffered severely during the frost, and in many cases are killed outright. If a sowing of the two former be made at once in a gentle

heat, the plant will get on fast enough to bloom in August and September. We shall have to wait for *Wallflowers*, *Stocks*, *Forget-me-nots*, &c., for another year. Mixed borders of hardy plants should be gone over, the surface cleaned and stirred, as far as it can be done with safety, and a top-dressing of dung and decaying leaves added. Seedling *Violas* and *Pansies* in boxes or beds, raised from seed sown in autumn, should now be planted out to flower, and will be found useful in early summer. Unoccupied flower-beds should be dug over, preparatory to planting them in April and May. *Mignonette*, *Sweet Peas*, *Candytufts*, *Eschscholtzias*, and other useful hardy annuals may now be sown. Messrs. Vilmorin and Co.'s new white and pink Candytufts are well worthy attention, and so are the pretty forms of *Dianthus chinensis*, double and single.

Kitchen Garden.—The ground is in an unfit state for sowing as we write, being cold and wet, but crops must be sown. Some succession *Peas* and *Beans* should be put in as soon as the ground can be worked, and later, the bulk of the vegetable crops. A fine day should be chosen to sow *Cabbages*, *Broccolis*, *Cauliflowers*, *Savoy*s, *Beet*, *Carrots*, *Parsley*, *Parsnip*, *Spinach*, &c. From the 12th to the 20th of March is reckoned a good time for successional sowings. In the matter of *Peas*, a good rule for keeping up a supply is to sow when the last-sown crop is just appearing above ground. In sheltered positions early *Potatoes* can be planted early in the month, and the main-crop varieties towards the end of the month.

Fruit Garden.—All nailing, pruning, and training should be executed without delay, as getting in the kitchen-garden crops will occupy a great deal of time. All fruit-trees are as yet quiet, or only just beginning to swell their buds, and we are pleased to note there is a general promise of a fruitful season. If the recent severe frost has restored the balance of time and order among the seasons, and spring, for this year at least, does not put in appearance in the middle of winter, we shall not have so much reason to regret the spell of wintry weather, which for such a length of time has held dominion over the face of Nature.—
SUBURBANUS.

LES PALMIERS.



THIS is the title of a handsomely illustrated book on Palms, recently published by M. Rothschild of Paris. The author is M. Oswald de Kerchove de Denterghem, whose name is familiar as that of one of the leading horticulturists of Ghent, and who, in the fine collection of the Comte de Kerchove, and those of the far-famed Ghent nurseries, has

had peculiarly favourable opportunities for studying the subject. The result, we are pleased to say, is commensurate with the opportunity, and we have now a most useful as well as handsome imperial octavo volume of 348 pages, illustrated with upwards of 200 woodcuts, and with 40 coloured plates—a book which was much wanted in gardens.

The text, which is written in French, is divided into twelve chapters, which treat on various topics in the following order:—(i.) on the geography of palms; (ii.-vi.) on the various palm regions of the world; (vii.) on fossil palms; (viii.) on the history of palms; (ix.) on botany of palms, including an index of species, with synonyms; (x.) on the uses of palms; (xi.) on the culture of palms; and (xii.) descriptions of the plates. A tabulated view of the respective classifications of Martius and of Wendland are given, and will be found very useful for ready reference in so accessible a volume; but the most useful part to English cultivators will probably be the alphabetical list of species with synonyms, since the opportunity of studying the affinities of species on the part of horticulturists who have a botanical turn of mind, is perhaps more limited in the case of palms than in any cultivated group of plants, mature examples being confined to very few collections, or being otherwise very limited in number. As an illustration of the utility of this index, we may refer to the beautiful and graceful plant represented on Plate IV., which is inscribed *Kentia divaricata*: which we learn from the list in question, is the proper name of the *Kentia gracilis* of Linden, in *L'Illustration Horticole* t. 245, the true *Kentia gracilis* of Brongniart, being a species of *Cyphokentia*. The book, which is beautifully printed, and altogether very nicely got up, reflects great credit on both author and publisher; though we should gladly have welcomed brief diagnostic descriptions of the species, or at least, a synoptical list showing their leading characteristics in contrast.—T. MOORE.

GARDEN GOSSIP.



THE ANNUAL MEETING OF THE ROYAL HORTICULTURAL SOCIETY took place on the 11th ultimo, the President, Lord Aberdare, in the chair. Lord Skelmersdale, Lieut-Col. W. T. Makins, M.P., and Mr. A. Grote, F.L.S.,

were elected members of Council, in place of Mr. W. Haughton, Mr. C. J. Freake, and Mr. P. W. S. Miles. The officers were re-elected. In the Report from the Council, which was unanimously adopted, it is stated that the meetings of the Scientific, Fruit, and Floral Committees have been numerous attended; and the members have been most diligent in the discharge of their honorary duties. The usual high standard of excellence, both as to fruit and plants, has been maintained. Four parts of Vol. V. of the Society's *Journal* have been published during the year. The reports of Chiswick trials include Violas, Clarkia, Iberis, Viscaria, Godetia, Tomatos, Asters, Turnips, Filberts, and Savoy. The *Fruit Catalogue*, published several years ago, is under revision, and will be corrected up to date, and reprinted in the form of an appendix to the *Journal*. The condition of the garden at Chiswick is satisfactory. The rockery formed at the commencement of 1877 has proved a most interesting attraction. The severe frost which has prevailed during the present winter has done to the outdoor plants at Chiswick serious damage, the full extent of which cannot be ascertained as yet. The lowest temperature registered at Chiswick has been 12°,—i.e., 20° of frost. The crop of Grapes in the great vinery has been good. A wonderful crop of fruit has been produced on the cordon Peach trees on the wall—an experiment which has proved instructive, as a means of comparing the different varieties. Collections of the most approved varieties of Figs have been planted out as standards in the old orchard-house, which has been entirely devoted to the trial of their adaptability for this mode of culture. Trials of Cabbages, Peas, Lettuces, Endives, Beet, and Strawberries in pots have been made by the Fruit and Vegetable Committee; and of Gloxinias, Abutilons, Bouvardias, Cannas, tuberous Begonias, double Ivy-leaved Pelargoniums, and double-flowered Zonal Pelargoniums in pots; and as bedding plants, of Verbenas, Tropæolums, and many varieties of annuals, have been made by the Floral Committee.

— MEETINGS of the NATIONAL FLORIST SOCIETIES—the Southern section of the National Auricula and National Carnation and Picotee Societies—were held on the 11th ult., for the purpose of appointing judges for the ensuing shows, and for considering the question of ways and means. The honorary secretaries reported that although a fair response had been made to the applications for continuation of subscriptions, yet to place the respective committees in a position to meet the sums offered as prizes, and the necessary working expenses, each Society stands in need of further help to the extent of £10. The lovers of these flowers will of course give their assistance, but even those who are not connoisseurs will be doing good work by lending a helping hand, as the societies quoted have been doing floriculture a real service. This year, both societies hold their show at South Kensington. Subscriptions may be sent to either of the honorary secretaries:—Mr. E. S. Dodwell, 11 Chatham Terrace, Larkhall Rise, Clapham; or Mr. J. Douglas, Loxford Hall Gardens, Ilford.

— THE ROBINIA PSEUD-ACACIA BESSONIANA, though not new, is not so well known as its merits deserve, for it is without doubt one of the handsomest of all the compact-growing forms of the Locust-tree, being comparatively vigorous in development, yet always close and symmetrical in outline, fresh and cheerful in colour, and retaining its greenness till late in the autumn.

— AS an ADDITION TO THE AURICULA PRIZES to be given at the ensuing show of the National Auricula Society, at South Kensington, Mr. W. J. Barus, of Bristol, offers to the winners of the first prizes in certain classes the articles named below:—

Class.				Value.
I.—A	20 in.	patent square hand-glass...		12/6
A.—An	18 in.	ditto ditto	...	10/6
B.—A	16 in.	ditto ditto	...	9/0
C.—A	14 in.	ditto ditto	...	7/0
D.—A	12 in.	ditto ditto	...	5/6
K.—A	21 in.	cap ...	...	4/0
L.—A	21 in.	ditto ...	...	3/0
N.—A	20 in.	ditto ...	...	2/6

— A NEW RASPBERRY-TRAINER has been brought out by Mr. T. Wilkinson, of Newton-le-Willows, whose pea-trainer we noticed in a former volume. It consists of double iron standards, a foot apart, on which two wires are strained near the ground, and two at the top. The fruiting-canues are tied to these wires—on either side, thus giving double training-room. The young shoots grow up straight between the two, and do not shade or interfere with the fruit. At pruning-time, the old fruiting-canues are cut out, and the young ones tied in as before. The double-standards are usually made 12 in. apart, but can be made to any width required. Two standards, one for each end, is sufficient for a row of Raspberries 30 ft. long, and with one intermediate standard, for a row of 50 ft. These, as well as the pea-trainers, are useful where ordinary stakes and pea-sticks are not easily obtained, and for amateurs' gardens they are much neater.

— THE MOUNT ATLAS NUT (*Corylus algeriensis*), writes Mr. T. F. Rivers, in the *Garden*, was imported some twenty years ago from a Continental nursery by my father. Its native country is the slopes of Mount Atlas, a district particularly rich as regards fine nuts. The tree is vigorous and hardy when mature, but I have noticed that the young layers are liable to be slightly injured by frost. It is singularly fertile, and the fruit is borne in large clusters, covered by a hairy, spreading, and handsome husk longer than the nut, and furnishing a very ornamental design for the electrotype makers of baskets and epergnes. The nut itself is large, full, and well-flavoured.

— ACCORDING to *Le Cultivateur*, if a little CHLORIDE OF LIME be spread on the soil, rats and mice and insects will at once desert it. Plants may easily be protected by it from insect plagues, by simply brushing over their stems with a solution of it. It has often been noticed that a patch of land which has been treated in this way remains religiously respected by grubs, while the unprotected beds round about are literally devastated. Fruit-trees may be guarded from the attacks of grubs by attaching to their trunks pieces of tow, smeared with a mixture of chloride of lime and hog's lard, and ants and grubs already in possession will rapidly vacate their position.

— THE following kinds of LIME TREES are said to be good for town planting, for which it is known the common kind is unsuitable, owing to its early defoliation. The sorts recommended are *Tilia alba*, *T. macrophylla*, and *T. dasystyla*, which retain their fine, bold leaves until most other deciduous

trees are bare of foliage. *Tilia alba* is an old and well-known tree, but it is not so often seen or planted as its merits demand; its leaves are larger than those of the common kind, and beautifully white on the under surface. The other two are remarkable for their large, handsome foliage, fully double the size of that of the common lime; they are somewhat alike when seen at a little distance, but when closely examined they are sufficiently distinct to be kept separate. *T. dasystyla* is not well known, nor perhaps plentiful, but it has two good qualities belonging to it—its leaves are large and fine, and they hang on the tree till late in the season.

— MR. BUIST, of Philadelphia, writing to the *Gardeners' Chronicle*, attests the value as an INSECTICIDE of a mixture consisting of two tablespoonfuls of refined coal-oil, in four gallons of weak soapsuds. The liquid is to be used with a syringe, and will kill mealy bug and all insects known to plant-growers. He has used it for the past two years.

— AMONGST variegated shrubs with deciduous leaves, CORNUS MAS AUREA ELEGANTISSIMA may be regarded as a gem of the first water, its rich and varied tints being hardly inferior to those of some of the best variegated Crotons. It is a new plant, and as yet rather expensive, but being really good, it will be sure to give both pleasure and satisfaction.

— THE difficulty sometimes experienced in TRANSPLANTING EVERGREEN OAKS is met by Dr. Hemphill, of Clonmel—so says the *Garden*—by cutting in the trees to nearly bare poles, removing all the side branches to about 6 in. in length, leaving no leaves, and also root-pruning, if need be. In this way, evergreen oaks of large size may be safely transplanted. This plan was pursued by Mr. Bain, of the College Botanic Garden, Dublin, many years ago, with surprising success; the trees broke out in healthy buds all over the main stems, and became in a few years beautiful, symmetrical specimens. The same plan has been tried with cork trees, and with perfect success, transplanting them in spring.

— A FINE plant of the superb Fijian Fern *TODEA WILKESIANA*, introduced a few years ago by Messrs. Veitch and Sons, is now growing in the fernery at Daveham Bank, Malvern, Links, the seat of J. D. Perrin, Esq. It is over 3 ft. in diameter, and is planted in the rockwork, where it stands on a very prominent point, its beautiful fronds forming a graceful plume-like head, which is very attractive. The plant is undoubtedly one of the finest of the species, and well worthy attention.

— FOR ORANGE-TREE CULTIVATION, good, sound, fibry loam is necessary, and should form the chief bulk of the soil, especially in the case of large old plants, that in the nature of things cannot often be retubbed or potted. A few crushed bones mixed with it will be found to suit them, as the young rootlets cling closely to them. If the loam is heavy, a little old manure or leaf-mould with sand, should be added to lighten it, and finely pulverised marl may be advantageously added to that which is light and sandy. The pots should be well drained, as stagnant water about the roots is destruction to them, and the soil should be rammed

in firmly. The spring is the best season for re-potting. When the plants are mainly grown in loam, the growth is short-jointed and fruitful, and little or no pruning is required.

— **HERE** are some fast-growing large-leaved OAKS which will succeed on dryish loamy soil:—*Grey-green*.—*Quercus altissima*, *Cerris crispa*, *pubescens*, *pyrenaica*. *Variegated with Yellow or White*.—*Q. pedunculata foliis maculatis*, *p. foliis arguteo-pictis*, *p. Joveanensis maculata*, *p. foliis pulverulentis*. *Yellow*.—*Q. pedunculata eoucordia*, one of the best yellow-leaved trees. *Red-purple*.—*Q. pedunculata atropurpurea*; *sessiliflora purpurea* or *nigricans* is not so satisfactory. *Red in Autumn*.—*Q. ambigua*, *nigra*, *obtusiloba*, *palustris*, *Phellos*, and *ilicifolia*, the latter a shrubby species, suitable for a poor sandy soil.

— **IN** the *Gardener*, Mr. Bardney, writing of HORSE-RADISH, states that the whole stock should be lifted annually, that portion that is fit for use being laid in in some convenient place. The side rootlets should be selected for replanting, and cut into lengths of from 7 in. to 8 in., all the young fibry roots being scraped off with the back of an old knife, and then rubbed with a rough cloth, with the exception of half an inch at the bottom, which should be left to form roots when planted; they should be tied in bundles and plunged in coal-ashes, or laid into the ground with their top ends exposed until March, when they should be planted in ground that has been deeply trenched and well manured, in rows 18 in. apart each way. They are best planted with a dibble, and the holes filled up with light soil, covering the crown about 2 in. Treated in this way, the small pieces planted in March will by the end of November have become clean, straight sticks 6 or 7 in circumference, fit for lifting.

— **THE** *Builder* states that M. Lostal, a French railway contractor, recommends QUICK-LIME AS A PRESERVATIVE FOR TIMBER. He puts the sleepers into pits, and covers them with quicklime, which is slowly slaked with water. Timber for mines must be left for eight days before it is completely impregnated. It becomes extremely hard and tough, and is said never to rot. Beechwood prepared in the same manner has been used in several ironworks for hammers and other tools, and is reputed to be as hard as iron, without losing the elasticity peculiar to it. According to the *Kurze Berichte*, lime slaked in a solution of chloride of calcium is used at Strasburg as a fire-proof and weather-proof coating for wood.

— **M.** BERTOT, of the Paris Academy, has devised a simple method of taking IMPRESSIONS OF PLANTS, requiring only a large sheet of paper, some olive-oil, black-lead, ashes, and resin. The paper is first lightly oiled on one side, then folded in four, so that the oil may filter through the pores, and the plant may not come into direct contact with it. The plant is placed between the leaves of the second folding, and in this position pressed—through other paper—all over with the hand, so as to make a small quantity of oil adhere to its surface. Then it is taken out and placed carefully on white paper, another sheet is placed above (since two impressions can be taken), and the plant is pressed as before. On now removing it, an invisible image remains on the paper. Over this a

quantity of black-lead (or ashes, &c.) is distributed in all directions, as in applying sand to writing, and the image then appears in all its parts. With an assortment of colours, the natural colours of plants may be reproduced. To obtain fixity, resin is added previously to the black-lead in equal quantity, and exposed to a heat sufficient to melt the resin.

— **THE LETTUCE DISEASE** is sometimes a troublesome infliction on plants grown in frames, which are affected by a parasitic fungus which ultimately destroys them. M. Max Cornu (*Comptes Rendus*, December 16, 1878), recommends growers to prevent the diffusion and local production of the parasite. If the parasite makes its appearance early, the culture of the Lettuce should be postponed; if late, then the crop should be gathered before its appearance. Care should be taken to avoid sowing with the seed *débris* which may contain spores of the parasite. The seeds, too, should be gathered from healthy plants, and all diseased leaves removed. Alkaline sulphurets might be tried. Care should be taken, in opening the frames, that the wind does not disseminate the spores; each suspected frame should be opened separately, while the others are closed. The site for the frames should be changed each year, and fresh soil made use of. The mould is a species of *Peronospora* allied to that which produces the Potato disease.

— **IN** STAPHYLEA COLCHICA we have a new form of Bladder-nut, allied indeed to the European *Staphylea pinnata* (a most striking hardy shrub, with light green pinnate leaves, and drooping clusters of elegant white flowers), but differing in its wider leaflets, generally erect clusters, larger flowers, spreading sepals, and smaller seeds. *S. colchica* is a native of the Caucasian provinces to the east of the Black Sea. Under natural circumstances it flowers, like its congener, in early spring, so that it is a most desirable plant for the shrubbery; but it is more especially to be recommended as a plant for early forcing. Its pure white flowers rival, if they do not excel, the white Lilacs and Deutzias, but they are deficient in fragrance. Messrs. Veitch and Sons have showed it in very nice condition, at both the January and February meetings of the Royal Horticultural Society.

Obituary.

— **MR.** GEORGE P. TYE died at his residence, Stamford Road, Handsworth, Birmingham, on January 19th. Mr. Tye will be long remembered as the producer of the Improved Registered Hyacinth Glass, introduced about 1852, which was indeed a great improvement on the old tall, ill-contrived vessel in which Hyacinths were in former times grown.

— **MR.** NINIAN NIVEN died at Drumcondra, on February 18th, in his 80th year. He was of Scotch birth, but removed to Dublin when 24 years old, and for a considerable period held the post of Curator of the Glasnevin Botanic Garden, now for many years most ably filled by Dr. David Moore. Mr. Niven has subsequently been successfully occupied as a landscape gardener, and was highly respected by his fellow-citizens, as an evidence of which, there were 30 carriages in his funeral cortege.




Nymphaea alba var. *rosea*

W.H. Fitch del.

P. De Pannemaeker Chromolith. (Gand) Belgique.

NYMPHÆA ALBA, VAR. ROSEA.

[PLATE 487.]

HE beautiful hardy Water-lily represented in the accompanying plate originated in Sweden, where, however, it is exceedingly rare, since it is known to occur wild in one lake only. The mode in which it originated seems uncertain; it has even been suggested that some peculiarity in the water may have had an influence in producing the colour. However this may be, it is a most beautiful acquisition for our hardy aquaria, and seems to have become a perfectly constant form, as we have seen flowers from various sources, all presenting the same showy character.

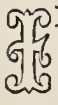
The plant is no doubt a variety of the white Water-lily of our own country, *Nymphæa alba*, which it exactly resembles in habit, and in the character of the flowers, which differ only in the central petals being of a deep rosy-red

colour, and the outer petals more faintly tinted with a warm blush. These colours contrast well with the rich yellow of the stamens, and render the flowers very attractive.

This new Water-lily has flowered at Kew and in other establishments in this country; and Messrs. Frœbel, of Zurich, sent over cut specimens of great beauty last year, so that we may expect it may soon become sufficiently plentiful to find a place in all gardens where suitable accommodation can be found for it. What an enrichment will such a lovely flower add to the many charms of our pleasure-grounds, when it is sufficiently abundant to be introduced into our ornamental lakes and lakelets. The list of showy hardy aquatics is not so long, but that this novelty may be welcomed with *empressement*.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

XVII.—THE APRICOT, &c. (*continued*.)

N continuation of my subject, I may observe that the thinning-out of the fruit, when it sets very freely, is an object of sufficient importance to render necessary a few observations regarding it, and its influence on the future well-doing of the trees. The number and consequent weight of fruit which a tree should be allowed to bring to perfection should always be regulated by its strength and vigour; also its age, and the space it covers. Very robust and vigorous trees are often greatly benefited, as regards inducing a fruitful habit of growth, by the check which the exhaustive process of carrying fruit to perfection always exercises upon them. We may therefore allow such trees to carry double the number that it would be wise to leave on trees of a less vigorous habit of growth, even if it comes to leaving four or six upon a square foot, instead of two. What may be called full crops of this most useful and delicious fruit are, however, the exception rather than the rule, and the temptation to take a great number, when a good opportunity occurs, is very great; but this is the very thing that ought to be resolutely avoided, for the good of the trees in after-years, because the taking of an excessive amount of fruit in one year is often the cause of scarcity for several seasons after.

The cause of this appears to me to be very obvious, for bearing in mind that the fruit draws largely upon the resources of both roots and branches, and contributes nothing in return, but rather the contrary, by absorbing the strength that would otherwise be expended in the healthy development of the wood and foliage, it is obvious that the latter should be encouraged, in order that the power of fruit-bearing should be continuous, instead of intermittent. Now this can only be done by the timely removal of so much of the fruit as shall suffice, to prevent the exhaustive process from being carried so far as to interfere with the fruit-bearing power of future seasons. Weakly-growing trees especially should be very severely thinned of fruit, and the growth encouraged by surface-dressing with rich compost or other available means, such as a free application of diluted liquid manure during the growing season. This is what is generally understood, when attention is drawn to the necessity for maintaining the balance of the tree—that is, its condition for fruit-bearing on the one hand, and a healthy development of growth on the other. Either condition, if allowed to predominate, is opposed to the real object of all fruit-culture, which should be so to regulate both, that under favourable atmospherical conditions as regards

weather and protection, a fair annual return for labour may be reasonably expected. Deficiencies in crops are not always the result of inclement weather in the spring, for trees which have been exhausted by excessive bearing will not carry a crop the next year without great injury, let the weather be ever so favourable.

We come now to the Winter Pruning and general management during the dormant season, which may be commenced as soon as the foliage has all fallen. Here let me recommend the cultivator to loosen the trees entirely from the wall every second or third year, the branches being tied together in bundles, to prevent their being injured by knocking about, and then to paint the walls entirely over with a mixture composed of lime, sulphur, clay, and soot or lamp-black, which, when mixed together, will form a wash of a neutral tint, which is not offensive to the eye. This should be mixed up with strong soapsuds to the consistency of rather thick whitewash, and worked well into all nail-holes, cracks, and crevices. It will act as a preventive against the attacks of noxious vermin, by smothering them in their haunts; but more especially will it be useful in destroying the little patches of the eggs of the apricot moth (*Pædisca angustiorana*), called also the narrow-winged red-bar moth, the larvæ of which roll up the young leaves in May, thus forming for themselves a home in close proximity to the young fruits on which they feed, and amongst which, if left undisturbed, they cause great havoc, as a fruit once pierced is sure to drop off, from inability to form a stone.

I have been familiar with this little depredator now for half a century, during which time I have destroyed many thousands, at the winter and spring pruning, by merely rubbing with the face of the hammer the little patches of eggs, which the female deposits on bright glazed portions of the bricks in the wall. So cunningly is this accomplished, that at a casual glance the little patch of eggs, about a quarter of an inch in diameter, appears to be merely a portion of the glaze on the surface of the brick; but once recognised, it is not likely to be mistaken afterwards, and, of course, should be ruthlessly rubbed out. The practice, therefore, of covering the whole surface of the wall with a thick pigment is certainly beneficial in many

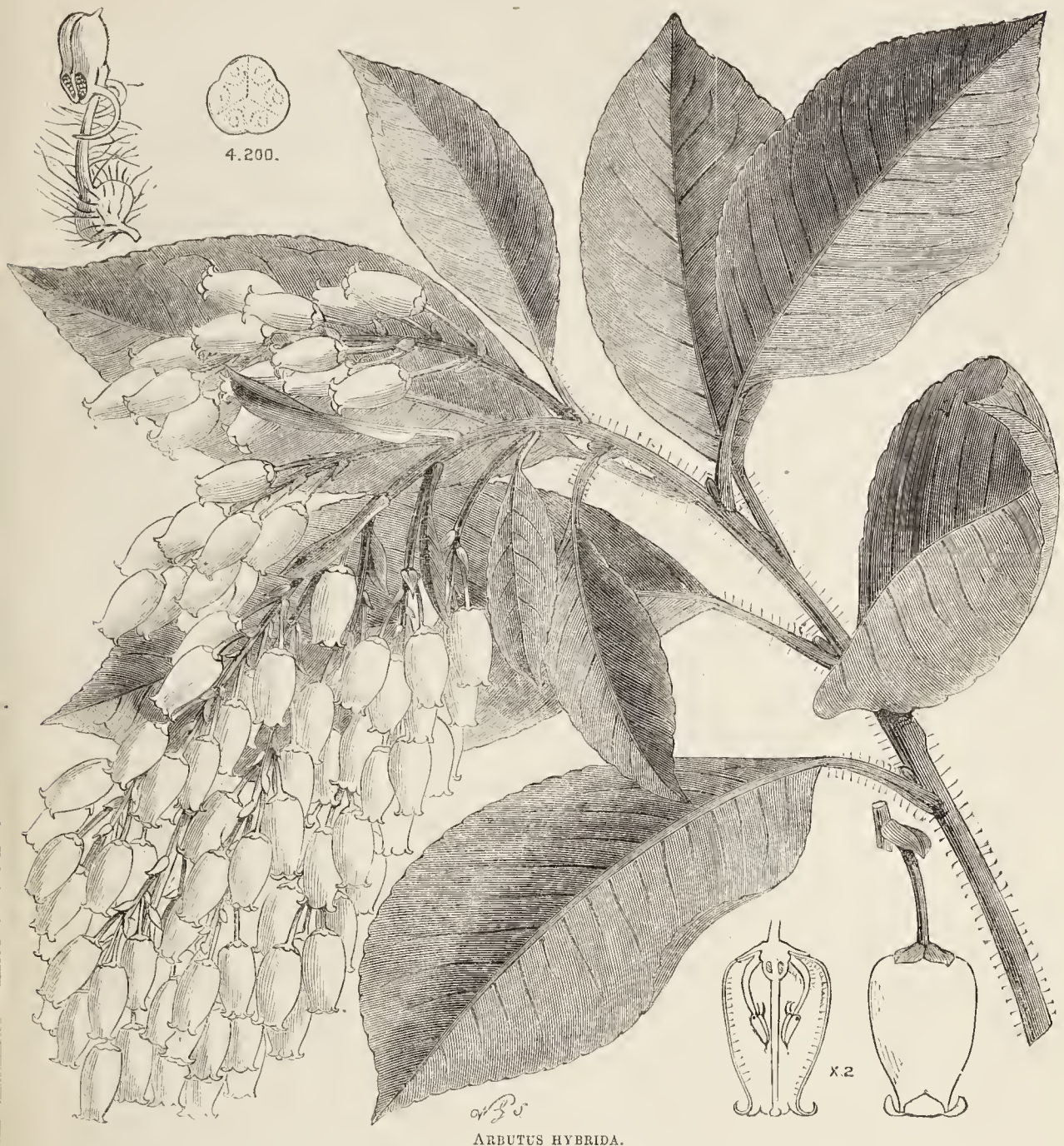
ways, and calculated to save much after-trouble.

It is not always that glazed surfaces are to be found on brick walls, and in such cases the eggs will be found to be deposited on various parts of the branches of the trees, but only on the very smoothest of the surfaces. The safest practice is, after pruning, to take away all the cuttings and burn them, and after searching for, and gently scraping off, all patches easily discernible on the wood, to paint it all over with the same mixture used for the wall, to which for this purpose may with advantage be added a little soft-soap, mixed up with about half a gill of paraffin oil. This latter is a safe agent, and a certain destructive to insect existence.—JOHN COX, *Redleaf*.

ARBUTUS HYBRIDA.

FEW of our hardy evergreens are more useful or ornamental than the *Arbutus Unedo*, or Strawberry-tree, so-called from its round scarlet berries, which, from their colour and granulated surface, bear no slight resemblance to the fruit of the Strawberry. The trees are not only pleasant-looking as evergreens, and ornamental as fruit-bearing subjects, but they have the additional recommendation, that the panicles of waxy flowers are to be seen on the plants at the same time as the ripened fruit, these flowers being the earnest of a crop in the ensuing autumn. The plants require to obtain some size and age before they produce fruit; but when once they do so, they bear abundantly. There are several slight varieties—seedling forms, no doubt—cultivated, but they do not differ very materially from each other. One which is called *ruber* has the flowers tinted with red, and *Croomii* is considered to be superior to the type.

This *Arbutus Unedo* is usually considered a hardy evergreen. In very severe winters it may indeed get a little damaged, but if the situation be at all favourable, it is rarely killed, whilst in average seasons it passes unscathed. There are a few other species in cultivation, such as *A. Andrachne*, a very fine Eastern species, and *A. procera*, a North-American species, both with larger and longer leaves than *A. Unedo*, which is found wild in Ireland. Another handsome sort is named *A. hybrida*, which is probably, as its name indicates, of



ARBUTUS HYBRIDA.

cross-bred garden origin. This beautiful Strawberry tree forms a broad bushy mass 12 ft. to 15 ft. high, densely furnished with branches, which are cylindrical, and thinly pilose. The leaves are elliptic in form, 3 in. long, and $1\frac{1}{2}$ in., or more, in breadth, dark green, smooth and shining above, paler beneath, and finely serrated on the margin, attached by a short channelled petiole. The inflorescence consists of terminal drooping panicles of urceolate flowers, of a pale or watery greenish-white colour, wax-like in appearance, and hanging in dense ovoid pointed masses from the top of every shoot; they are about $\frac{3}{4}$ in.

long, and are each attached by a short smooth pedicel. These flowers smell strongly of Cucumbers. The woodcut shows a side-sprig, bearing one of the smaller flower-panicles; an enlarged flower seen from the outside and in section; and a much more highly magnified view of one of the anthers, showing the pores by which they shed their pollen, and the curious curved awns attached to the back of the anther-cells.

This fine *Arbutus* is represented in the accompanying figure from the *Gardeners' Chronicle*. We are indebted to Messrs. G. Jackman and Son, of Woking, for the specimens described,

which we saw blooming in their nursery in great beauty in the winter of 1877, and being comparatively little known and a most desirable shrub for ornamental planting, we have no doubt many of our readers will be glad to make acquaintance with it. In the Woking Nursery there were growing two or three huge masses of the plant from 12 ft. to 15 ft. high, almost every spray of the ample head producing its panicle of flowers, which, though not highly coloured, are of a pale greenish-white waxy hue, which contrasts well with the dark full green of the foliage. Woking Common, it is well known, is a very keen and exposed locality, and the specimen plants of this *Arbutus* to which we refer were growing in an elevated open position, without shelter of any kind, so that there can be little doubt of its hardiness. Its beauty at once arrested attention; indeed, we were led to conclude it was one of the best winter-blooming evergreens in cultivation.—
T. MOORE.

CROSS-BRED FERNS.

UNTIL a comparatively recent period, the production of hybrid or mule ferns was rather a question of doubt and speculation, than a demonstrated fact. It is true that amongst *Gymnogrammas*, *Pterises*, and *Lomarias* different forms had appeared of intermediate character, and such as gave countenance to the notion that hybridization was possible; and when the mode of fertilization came to be pointed out, it seemed to present no serious obstacle in the way of the crossing being effected. Nevertheless the fact remained, that while ferns sprung up by tens of thousands in our fern-houses, where there must have been every possible admixture amongst the falling spores, the supposed hybrids could after all be counted up by units.

Latterly, however, the subject has received greater attention and better illustration, for the extensive cultivation of varieties of British ferns has led to the artificial raising of a very large number of plants from spores, and also prompted the attempt to gain new forms by crossing. A very interesting paper on this subject was read about a year ago by E. J. Lowe, Esq., before the Biological section of the Birmingham Natural History and Microscopical Society; and as we have seen results

produced by Mr. Lowe which appear to confirm the views on this subject to which he then gave expression, our readers will no doubt be interested in the following abstract of the paper in question, which was printed in full in the *Midland Naturalist*, an excellent but cheap monthly periodical devoted to natural history subjects:—

"The reproduction of ferns from spores is a study of much interest, and one worthy of more general attention. The *modus operandi* is fraught with difficulties. The minute size of the infant ferns in their first growth is in itself dangerous, as any neglect will at once destroy the whole crop. The spores germinate as mere green points, imperceptible at first to the unassisted eye, and only rendered visible by the look of greenness from a number springing into life together. Spores of ferns differ from seeds of plants, inasmuch as they have no special organs, consisting merely of a homogeneous cellular mass. In seeds the young roots and the young shoots are present in the embryo, being developed from determinate points; whilst spores, on the contrary, consist merely of single vegetable cells, growing indifferently from any part of the surface. These points of life (*germinal fronds*), as they continue to grow, have a strong resemblance to liverwort (hence the term of *marchantia-like*). They gradually increase in size, and if they do not become impregnated, will occasionally exceed half an inch in diameter.

"The impregnation of the germinal frond does not seem to be capable of being accomplished without the action of strong light; indeed, grown in a somewhat dark corner, the growth seems to be arrested before arriving at that particular stage of life. The following experiment will illustrate what is meant:—Three years ago a large Wardian case was prepared, and the surface of the soil scattered over with spores from a number of varieties of *Scolopendrium vulgare*, *Lastrea Filix-mas*, *Athyrium Filix-femina*, *Polystichum angulare*, and *Lastrea dilatata*, each species being in a separate partition. This case was placed in a somewhat dark corner, under a plant stage. When the spores had been sown about six months the whole surface soil was covered over (and had been for several weeks previously) with the vivid green of the young ferns. At this time a second case was prepared, not for spore sowing, but for transplanting, in patches, the germinal fronds from the first case. Small portions of this green mass were lifted on the point of a knife and planted in thick lines. The second case was then placed in a light part of the greenhouse, having a north aspect. Under these circumstances, the transplanted patches very soon grew rapidly (whilst those in the case from which they were taken had made little or no progress), and in six months the second case was filled with a mass of fronds, yet no fronds appeared in the original case. A third case was then prepared, and for the second time small portions were removed from the first case into the new one, and this also was placed in a well-lighted situation having a north aspect. After being in this third case less than six months a large number of fronds appeared, whilst still no fronds appeared in the original case. A fourth case is now about to be planted from the same original stock, which, although still looking green and healthy, has no fronds developed, and, indeed, the germinal fronds it contains are still little more than mere points. Thus for three years the growing spores in a darkened

corer have remained all but dormant, whilst those transplanted from it have, in a situation of stronger light, a forest of fronds, varying between one inch and six inches in length, according as they have been selected from the second or third cases. This is mentioned as a very curious fact.

Most persons have observed what they call seeds on the under-side of the frond—though not necessarily on the under-side. These are not seeds, but spores; the first step towards the development of a fresh plant. It may be mentioned, briefly, that about the year 1840, Professor Nägeli, of Zurich, announced that he had made the discovery that in the marchautia-like germinal frond (*i.e.*, whilst in the liverwort-like condition) were to be seen the organs of reproduction; and about the year 1845, the Count Sumiowski, of Berlin, confirmed the existence of these so-called antheridia, and noted that two kinds of cells existed on the young germ frond, and that the male cells, on bursting, threw out spiral thread-like bodies, thickened at one end, and furnished with cilia about the thickened part, and these, from their activity, were called “animalcules.” The Count further stated that he had seen one of these spirals landed in a female cell. Hofmeister has since then distinctly observed the terminal bud of the new axis produced within the pistillidium (or female cell), and looked upon the globular cellule in its centre as itself the rudiment of the stem, the embryo originating from a free cell produced within it. Mettenius observed a nucleus within the globular cellule. Mercklin then declared that the spiral filaments swarmed about the pistillidium in numbers, and that he had seen them on rare occasions penetrate it. Professor Henfrey, about 1850, wrote an interesting article on this subject.

“Spores, when they are sown, germinate, yet they need not necessarily produce the same form as the frond from which they are taken. In their marchantiform stage of life they are said, as before mentioned, to flower, to have male and female organs or cells (more male than female cells), and these, be it remembered, are before there are any fronds, and it seems probable that it really depends upon how this impregnation is effected as to what kind of frond springs up from the germinal frond. The female organs are described as cells, and the male organs as spiral filaments which are tossed into the air, some of which, by landing in these cups, fertilise the plant in its caterpillar stage, and thus enable it to put on its butterfly-life or fronds.

“Let an example be taken in the Lady Fern, where a number of varieties have been sown together. Now if a spiral filament from the variety *Victorie* be tossed into one of these female cells, we may naturally expect the fronds, when they do appear, to be more or less cruciform, like those of the variety *Victorie*; whilst if this filament had been thrown from the var. *multifidum* instead, the result would be quite a different plant, a multifid but not a cruciform frond, unless the female cup belonged to a cruciform variety, under which circumstances there would probably result a combination of the two forms. Hence the endless variety that are now to be seen in a good collection. When once an abnormal form has been obtained, it seems only necessary to get a pedigree, *i.e.*, three or four generations, and it becomes almost impossible to raise a seedling of the original normal form; whilst without this abnormal blood it is equally almost impossible to raise any but normal forms.

“As regards the various normal forms that species will assume, it is a singular fact that most of our British ferns put on appearances closely in imitation of each other, that the varieties of each species have many characters in common, and that a certain law

of form of variety seems to extend more or less through both British and exotic species. The usual forms running through nearly all our British ferns are those having the fronds *crested, crisped, imbricated, confluent, multifid, acuminate, narrow, plumose, interrupted, depauperate, ramose, and dwarf*; and not only this, but we have the multiple of these, or the combining together of two or three characters in one frond, such as the *narrow-crisped*, the *multifid-crisped*, or the *narrow multifid*, for example. In a wild state abnormal forms are found most commonly where, from various causes, ferns do not grow luxuriantly, *i.e.*, grow under difficulties. When ferns flourish in a high degree, it is almost useless to hunt for abnormal forms.

“It seems that spores gathered from one portion of an abnormal frond will produce different varieties from those of spores gathered from another portion of the same frond; so that if an accidental abnormal portion of a frond be fertile, it is not impossible to reproduce from its spores plants having fronds in imitation of the accidental abnormal form.

“The method adopted by the author of this paper in raising plants from spores is one that can be recommended. Having carefully prepared the soil, and then roasted or boiled it, in order to destroy all animal and vegetable life, it is placed in a Wardian case or pan, having a glass cover. The soil, if roasted, will require to be wetted with boiled or distilled water, in order to be of a proper moistness. It is then pressed until there is a smooth surface, and after this sown with spores, which should not be covered with soil. All watering must be done from below, *i.e.*, the pan placed in a saucer full of water, immersed about one-third of its depth, and this must either be boiled or distilled water, to prevent a con- fervoid growth on the surface, which would kill the young fern-germs. On the surface becoming green with growing ferns, transplant with the point of a knife into much larger pans; and this can be best done by making small indents in the surface, and placing in them small patches of the spores, and lightly pressing each with a finger, taking care to wipe the finger dry after every pressure, or the young plants will cling to it. To procure new varieties spores are scraped off portions of a number of curious fronds, or parts of fronds of the same species, and sown thickly together, and the reason for sowing thickly is that the germinal fronds, by being pressed closely together by each other, become more or less vertical, —a position thought to be more easily fertilised by the male organs falling more readily into the female cells than when in a more or less horizontal position, as they would be if sown very thinly. Nature does, to some extent, provide for this by curling the thickened edges; yet under these circumstances, with thin sowing, the male spiral is more likely to be one from the same individual, and would therefore more probably produce a form identical with the parent germ-frond; whereas, if the spores of many forms be sown together, the chances seem to be much more in favour of the fertilisation by another variety being accomplished. After gathering the fronds for spores, it is better to place them in drying papers for a day or two, and then scrape off the spores and sow immediately. Freshly-gathered spores germinate much more quickly than those that have been kept for a time.

“It has been said,—Sow together only varieties of the same species, though occasionally, but very rarely, two species may be crossed, and a hybrid species produced. Still, it is so difficult to cross species, that we have at the most only a few examples to quote. These instances are probably:—First, *Lastrea remota*, a cross between *Lastrea dilatata*, and *Lastrea Filix-mas*; second, *Asplenium*

microdon, a cross between *Asplenium marinum* and *Asplenium lanceolatum*; and third, *Asplenium germanicum*, a possible cross between *Asplenium Rutamuraria* and *Asplenium septentrionale*. The author has failed to raise spores from any of these, and is not aware of any one else succeeding, whilst in a wild state the two so-called parents appear always to be growing together where the third form is found. There are plenty of good-looking spores on *Lastrea remota*, yet they will not germinate. For the last ten years several pans of spores from this fern have been sown yearly, without a single plant having been raised."

A NEW HYBRID DENDROBE.

DENDROBIUM SPLENDIDISSIMUM is the latest—that is, one of the latest—of novelties in Messrs. Veitch's Chelsea Nursery, and such a lovely thing generally, that it deserves something more than a passing notice. When Mr. Mitchell, with fatherly care, exhibited *D. Ainsworthii* at South Kensington, it was much admired; afterwards it improved—there came a rosy-tinted form of it, and it was held to be the finest of all hybrid Dendrobies. Now comes this "most splendid" hybrid of Mr. Seden's, the result of a lucky cross between the violet-scented *D. heterocarpum* and a good variety of *D. (caerulea) nobile*. The port of the plant is vigorous, the widely-expanded flowers being borne in pairs towards the extremities of stout, sub-pendent, greyish bulbs, 2ft. in length. In colour the flowers are creamy-white, the sepals and broader petals being glossy, and delicately tinted with rosy purple towards their apices. The bold lip is yellowish, with a dark reddish-purple blotch in the centre, and indications of hairy lines through the body-colour of the blotch, as in *D. heterocarpum*; the apex is also obliquely revolute, another characteristic of the last-named species. The larger habit of growth, the colour especially, the dainty dash of rose-purple on the petals, are evidences of the *D. nobile*—the noble—blood in its veins. The semi-pendulous habit may be derived from *D. heterocarpum*, but this is a secondary and immaterial matter altogether. The plant was shown to me as *D. Ainsworthii roseum*, but I could not reconcile myself to the name, although I had it from a good source. The bold, richly-blotched flowers, each three inches across, suggested those of *D. Wardianum* when newly open, an illusion which the broad, glistening petals, with their purple-laved tips, aided materially; and taken altogether,

the thing had a presence and *porte-empressment* which convinced me it was not *D. Ainsworthii*, in any of its rather varying forms, but rather a genuine new hybrid altogether. This view Professor H. G. Reichenbach has corroborated. I must say that I am afraid there is no possibility of *D. macrophyllum* having been one of its parents. There is no good evidence of this, as has been pointed out by Reichenbach, in his description of the new beauty (see *Gardeners' Chronicle*, March 8th, 1879, p. 298). That cross—that is to say, the results of it—are yet to come; nor is there much reason to hope that it may prove lovelier than the really "splendid" novelty just described, and of which Mr. Seden may feel pretty proud. For the sake of future reference, these *D. heterocarpum-nobile* hybrids may be thus tabulated:—

<i>D. heterocarpum-nobile</i> —	<i>Ainsworthii</i> .
<i>D.</i> " "	— <i>Ainsworthii roseum</i> .
<i>D.</i> " "	— <i>splendidissimum</i> .

A "little bird" sang of a still finer form of the last named, which may one day be forthcoming; and if so, I am sure its lucky possessor will not readily be induced to part with it—no, not for many shekels!—F. W. BURBIDGE.

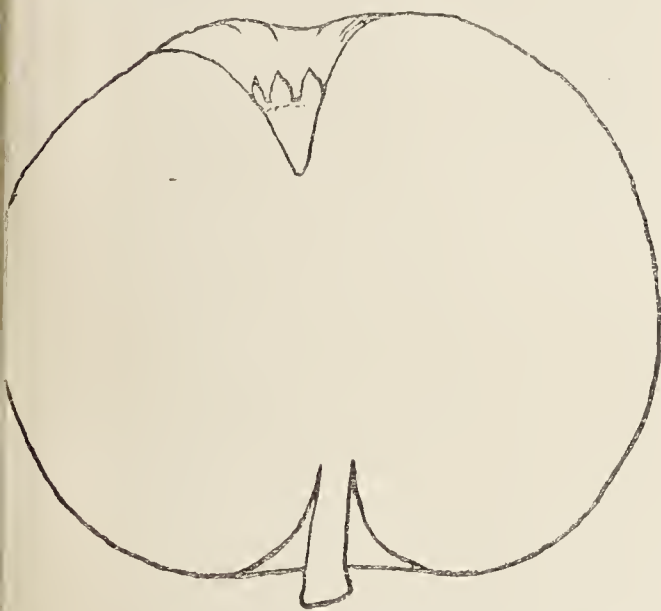
BOTTLING GRAPES.

HAVING been one of the first to make trial of the plan of bottling late Grapes, and that on a large scale, I must state that I have found the system to possess great advantages, especially from being enabled by its means to get the vines pruned and dressed at the proper season. At one time, I tried the plan of cutting off bunches of Lady Downe's and the Royal Vineyard—the latest-keeping white Grape—and sealing the cut ends of the shoots with wax; I also inserted some in mangold-wurzel roots or turnips, but the berries shrivelled very much before April was out. Now, when bottled, I can keep Lady Downe's in good condition until June.

As to the flavour of the berries in the bottled Grapes being deteriorated, I have never found this to be the case to any great extent, where the water in the bottles was kept clear and sweet by means of small pieces of charcoal placed in it. Another effective means of keeping bottled Grapes from losing their flavour, is to have a proper room or place to hang the bottles in.

It should be provided with plenty of ventilation, and should be dry, and out of the direct influence of sun-heat. When I first came to Welbeck, the vinery in which the latest Lady Downe's and West's St. Peter's, were grown, showed the bunches hanging on the vines in April mixed with the young shoots, and of course the flow of sap had burst some of the berries, and spoiled their flavour.

I am in hopes that a seedling Grape I have raised here, a cross between Lady Downe's and West's St. Peter's, will prove to be a late Grape of the very best quality. I believe I shall be able to keep it as late as Lady Downe's, and the flavour of the berries is as rich and vinous as that of West's St. Peter's. It is very distinct from any other variety I know, having a purplish tinge on the young wood, and on the midribs of the foliage.—WILLIAM TILLERY, *Welbeck*.



RAY, AND HIS NAMESAKE
APPLE.

IATELY, a friend gave me a large green Apple, and inquired its name, because the kind bloomed late, and thus escaped spring frost better than the early kinds. I found it was the Ray Apple, which I formerly knew in the North by the same name, and understood it was named so in memory of Ray, the father of English botany. The accompanying outline figure represents the same Apple, and the kind is readily known by its large white blossoms. The fruit lasts till the end of January, but after that period becomes insipid and unfit for kitchen use.

I have said but little on this old Apple, to make room for a brief remark on Ray's career as a botanist. He was born on November 29th, 1629, at Black Notley, Essex. His father was a blacksmith, yet had means to give his son a college education at Cambridge. Doubtless Ray was the first in this country who arranged plants into families according to their kinds, which began the natural system of botany; and this, after being improved by others, upset the long-cherished sexual system of Linnæus, on which some of our best books on botany were founded. The sexes of plants were, however, spoken of by Ray before Linnæus's time, and in fact, some persons consider that the illustrious Swede took from Ray the hint of the sexes of plants, which is the corner-stone of his artificial system. Anyhow, the French kept to Ray's plan, now styled the "Jussieu system," yet it is fair to remember that our countryman began it. Ray's fame caused jealousy among other botanists of his day, and being a clergyman, he was persecuted for "conscience' sake." But he was not the man to doubt the sanctity of an oath, and for this he was deprived of all he had won at Cambridge, except his honour. Luckily, his old pupil, Willoughby, never forsook him, but opened his door and purse to him, and both went on hand in hand together—the naturalist among his animals, the botanist amongst his plants. Perhaps Ray's fault was being too sensitive to sudden inroads on botany. In after-life, he retired to his native place, and there is a tablet in the village churchyard to his memory. But his fame as a botanist is his best monument.—J. WIGHTON, *Cossey Park*.

PHLOXES AS FLORISTS'
FLOWERS.

THE Phlox is an excellent flower for the herbaceous border and the front part of the shrubbery, as the plants continue to throw up trusses of bloom in the same place for many years, but each year after the third the size of the trusses and quality of the flowers deteriorate; and to grow them of sufficient quality to satisfy a florist, a fresh lot of plants must be provided annually. To this end the young plants should be propagated as early in the spring as the cuttings can be obtained. If the plants are wintered in pots, and the pots are plunged in a cold frame, the

cuttings from these will be ready at least three weeks in advance of those from the plants growing in the open ground.

Those persons who can command a hot-bed with just a little bottom-heat, will have a considerable advantage over those who have no glass protection. When the shoots have grown about 2 in., those intended for cuttings should be taken off close to the crown of the plant. I insert each cutting singly in a small pot, in soil composed of three parts loam, one of leaf-mould, and a little sand. The pots are then plunged in some cocoa-nut fibre refuse over a dung-bed, and the glass-light kept rather close for a few days, and under these circumstances, the cuttings will soon strike out roots. When this has taken place, the plants will start into growth, and air must be more freely admitted. When the plants have grown about 2 in., I pot at once into 5-in. or 6-in. pots, and place the plants back again into the frame. By this time the heat will have declined, and it is no longer necessary, as the plants will root freely without bottom-heat.

When the roots have reached the sides of the pots, I remove the plants to a sheltered position out-of-doors. A stick must be placed to each, as the stems will not stand the force of a high wind. All the attention they require will be to supply the pots with sufficient water, using weak liquid-manure as soon as they are well filled with roots. Every one of the cuttings put in from the middle of February to the second week in March will produce a strong spike of flowers the same season, and each being grown in a small pot can be removed to the conservatory or greenhouse, where the delicate perfume thrown out by the flowers, and the striking effect produced by a judicious arrangement of the spikes amongst other plants, cannot fail to be appreciated.


If it is designed to cultivate them in pots a second season, the treatment should be this:—When the flowers fade, cut the spike off and remove the pots out-of-doors until November, when they may be sheltered for the winter in a cold frame. Repot in February or March into 8-in. or 9-in. pots. The compost best adapted for them is turfy loam four parts, rotted stable-manure one part, leaf-mould one part. Each plant will produce from three to five

spikes, but five ought to be the maximum number. The plants must be placed out-of-doors by the end of March, and they must also be fully exposed to the sun; water and place a stick to each spike, as already recommended.

—J. DOUGLAS, *Loxford Hall*.

MARKET PLANTS.—XI.

HYDRANGEAS AND AZALEAS FOR CUT BLOOMS.

 THE *Hydrangea Hortensia* is not only a well known, but a thoroughly valuable, market plant, because so useful for decorative purposes. When visiting Messrs. J. and J. Hayes's nursery at Edmonton, which is without doubt one of the largest market growing establishments in the metropolis, I saw some of their *Hydrangeas* when just going to market,—vigorous plants, in the most robust health, growing in 48-pots, and carrying four splendid trusses of bloom. This firm grows annually something like three thousand *Hydrangeas* for market, and in most cases one-year old plants, as the method of cultivation applied enables the grower to get as good a plant in one year as in three or four years.

The stock of *Hydrangeas* is obtained from cuttings. It has been found in striking cuttings that two points are of great importance, viz., having the wood of the right age, and employing the right temperature to strike the cuttings in. The cultivator of market plants is a man of keen perception, and constant contact with the subjects he takes in hand enables him to know just exactly when the wood is ripe for the manufacture of cuttings. Some twelve to twenty cuttings are put in a pot, and the pots plunged in a brisk dung-bed, where they root very quickly. "If the cuttings do not root in a week," remarked Mr. Hayes, "they simply flag, and will not root at all, and are of no good."

When the cuttings are properly rooted, they are potted off into small pots, and placed out-of-doors during the summer months to harden-off, but on no consideration are they allowed to become dry. The pots are plunged in some cool and moist material, which materially helps to prevent danger from drought.

A model *Hydrangea* in a 48-sized pot has four enormous trusses of splendid flowers. The plan is to stop the plants till they start with three or four shoots, and then allow them to go ahead and perfect their flowers.

Azaleas for cut blooms.—There is a very large demand for flowers of *Azaleas* during the autumn, winter, and spring, especially of white and delicately tinted varieties. The best sorts, or rather the varieties, that find most favour with the growers of cut flowers, are *Indica alba*, *Fielder's white*, *Triumphans*, *Souvenir du*



W. H. Fitch, del.

G. Severeys Chromolith., Brussels.

Plums.

1. Reine Claude de Bavay. 2. McLaughlin.

Prince Albert, Flower of the Day, and the old Splendens. Newer varieties are added slowly, and with great care.

Very large bushy plants of these varieties are grown in pots, in houses specially suited to them. The plants are repotted as soon as they go out of bloom; and after they are shifted, they are kept growing to set their buds for the next season, and are then hardened-off in the usual way.

The earliest-flowered varieties are pushed on early in the autumn, and ere October is over the first-fruits of the floral harvest are sent to market.—R. DEAN, *Ealing*.

CHOICE PLUMS.

[PLATE 488.]

LITTLE need be said in recommendation of the two varieties of plums represented in the accompanying plate. Those who know anything of fruits will recognise in the names of those here figured the designations of two standard varieties; but many of our readers—amateur cultivators, or others whose experience is but limited—may be glad to have some means at hand by which to recognise them, and to such as these, Mr. Fitch's portraits will be useful.

The REINE CLAUDE DE BAVAY (Fig. 1), also called *Monstrueuse de Bavay*, belongs to the race of Green Gages, and is a dessert plum of exquisite flavour. The young wood is smooth-barked. Dr. Hogg describes it as large, roundish, flattened at both ends (roundish-ovoid, according to M. Thomas), greenish-yellow in colour, mottled and streaked with green, and covered with a delicate white bloom. The stalk is about half an inch long, inserted in a small cavity. It has a yellow, tender, and very juicy flesh, which separates freely from the stone, and has a remarkably rich sugary flavour. The fruit is ripe at the end of September and beginning of October.

The variety represented at Fig. 2 is the McLAUGHLIN, an American Plum of first-rate quality, raised by Mr. J. McLaughlin, of Bangor, Maine. This also belongs to the Green Gage race, and has the young wood smooth. It is a vigorous-growing and free-bearing sort. The fruit of this variety is large, roundish-ovate, the diameter exceeding the depth; it has a thin, tender, deep golden-coloured skin, dotted and speckled on the exposed side with crimson, and covered with a thin bloom. The

stalk is longer than in the *Reine Claude de Bavay*, being three-quarters of an inch long. The flesh is firm and adhering to the stone, very juicy, with a luscious flavour. It ripens at the end of August.

Mr. Barron observes (*Florist*, 1870, 201) that the colour and texture of flesh more nearly resemble those of the Jefferson than of any other variety. Like the Jefferson, it is a clingstone, which is a slight disadvantage. The fruit is, however, very different,—larger, and possessing more of the Green Gage flavour. It is a robust-growing variety, and bears freely. For orchard-house cultivation, and for pot-culture, this variety is exceedingly well adapted, as it succeeds perfectly under these conditions.

In both these varieties, the fruit is of the highest quality. M. Thomas, in his *Guide Pratique*, designates the *McLaughlin* as a hardy and vigorous-growing plum of the first quality, while the *Reine Claude de Bavay*, he says, is of medium vigour, but very fertile. McIntosh notes that the fruit of the latter keeps long on the tree, and that it is a very fitting sort for the orchard-house or late plum-house.—T. MOORE.

GLAZED OR UNGLAZED FLOWER-POTS.

AN ordinary life-time has gone by since I took up this idea and worked it out. It met with some opposition at the time, by a certain class of cultivators, who held the doctrine that the porous pot admitted air to the roots, which the glazed pot did not, forgetting that both air and water had nothing to hinder them from getting to the roots of the plants, if they were so disposed. My flower-pots had an ornamental saucer to receive drainage-water, so that plants in such glazed pots and with such glazed saucers could be set upon any table without damping it. Moreover, each pot was fitted with a colander-bottom whose small holes were in the place of the one large hole of ordinary pots, by which contrivance they wanted no crock in the bottom, thereby giving more room for soil. Whoever has had to do with a large establishment, where some thousands of pots have to be washed, will readily grant that the getting-up of the material for potting is no small affair—even the crocks take time to prepare; but when we have a number of plants in pots, and the


pots are green with "mouldy damp and ropy slime," the washing of such becomes hard work. Glazed pots of moderate size might be used without extravagance all through the rooms, and even on the dining-table, being just as clean as a china plate or a glass tumbler.

After I had introduced glazed pots, I recollect seeing, in the garden of J. Baxendale, Esq., at Whetstone, a number of ornamental pots, with elegant saucers of my pattern, but none of them glazed, so that the porous terracotta would admit water to permeate it like a filter; still I was glad to see the thing attempted, though only half done. I was on another occasion shown through one of our London nurseries by the chief of the propagating department for indoor plants, and he pointed out to me a method of propagating plants of sorts difficult to deal with in the ordinary way, by having the cuttings placed between two porous pots, the inner one of which was kept full of water, and the outer one plunged in a hot-bed; and he claimed the invention as his own. I felt complimented, but said nothing, as the woodcut of such a contrivance may yet be seen in Loudon's "Encyclopædia," just as I gave it in to Mr. Loudon. I was glad to see that my labour had not been thrown away, for it was doing good service.

The late Dr. Lindley expressed himself in favour of glazed pots, and the expense seems to be the only drawback to their general use. Generally speaking, the roots of plants need neither light nor air, which are so essential to the stem and leaves; the ideas part at the collar, the roots divide, the radicle takes to the earth, the plumule takes to the air, so that the pot, whether glazed or porous, would not materially affect the health of the plant contained in it. Where pots containing ripe grapes are placed for ornament on the dining-table, there has always been some difficulty to disguise the vase of "mother earth," for where all else is beautiful, the red brick pot is sadly out of place. Now this could be easily obviated by glazed pots, so that the vines could be potted into them, to stand for fruiting, just as easily, and with little extra cost, as if earthenware pots were used, requiring an outer pot of china when the time came that they should appear on the dining-table. The kind of glaze is

called in the trade salt-glazing, and the ware thus glazed is thereby made very strong and durable. The character of the pot as to shape is that of a drinking-tumbler, or the ordinary shape of an unglazed earthen pot; but when the saucer is put under it, the character changes to that of a wine-glass or goblet, with a foot and there is a ledge or bead running round the pot, so that the stagnant water cannot return to the earth in the pot, as it does in the ordinary flower-pot. The salt glazed ware may be seen in the ordinary porter-bottles, and in some stone ink-bottles, and the tone should be a light stone-colour. I need not say that the makers can vary the colour to suit the views of the buyers with very little extra cost, but I am not writing now for what may be done, but relating what I have myself done; and whilst I give all honour to the old brick pot, I must try to hide its plainness, when it has to be placed on the dinner-table among its betters, gold, silver, china, &c. I have stated above that I saw the shape of my pots, in terra-cotta, in Mr. Baxendale's garden at Whetstone; they are, therefore, already in the trade, and can easily be copied by the potters and makers of other kinds of wares; but should glazed pots be wanted in bulk without stands, the cost would be only about half that of the vase form—the pot, with its ornamental saucer. The length of time that such ware would last would reduce the cost in the long-run to little more than that of the red-brick pot; and as for argument about air to the roots, the time has gone by for cavilling on that score. The glazed pot may, indeed, do some good, by maintaining moisture, for the brick pot was and is always a great drying and evaporating agent, and if the glazed pot moderates that action, and proves a damper, it will do horticulture some service.—ALEX. FORSYTH, *Salford*.

CROTON REGINÆ.

 HIS is one of the finer of the bold-habited varieties of Croton—*Codiaeum variegatum*—of recent origin, and received a First-class Certificate from the Royal Botanic Society in 1877. It belongs to the group which is well represented by *C. Williamsii*, and was introduced by Messrs. Veitch and Sons, of Chelsea, through their correspondent in Sydney, J. R. Young, Esq., who



CROTON REGINÆ.

no doubt obtained it from the South Sea Islands, whence so many of these handsome foliaged plants have been introduced. The introducers speak of this variety in the highest terms, and consider it to be unrivalled in the gorgeous colouring of its foliage. The leaves, as already noted, are large—8 in. by $2\frac{1}{2}$ in.—of an obovate elliptic outline, shortly acuminate, and distinctly stalked, the costa and the principal veins at first of a bright yellow hue, and eventually of the richest crimson, bordered on each side by a band of a brighter red colour, shading off to a bright orange; each leaf, moreover, is margined with a narrow band of the same combination of tints, while the ground colour is a deep olive green, sparingly spotted with yellow. In the earlier stages of the colouring process, the course of the veins is distinctly marked out by lines of yellow, the crimson and orange-red hues being taken on

later in the season, by a longer continued exposure to bright light, which is the great agent in the colouring of the leaves of these plants. Amongst the many varieties of this plant now available for cultivation, this must be regarded as one of the best of the broad or laurel-leaved series.—T. MOORE.

THE AMPELOPSIS AS AN ADJUNCT TO ARCHITECTURE.

THE great beauty of the Virginia Creeper, *Ampelopsis hederacea*, as an adjunct to architecture, is, we suppose, generally appreciated, whether it be as lending grace to architectural lines already worked out with faultless taste, or as serving to screen constructions in which grace and elegance may be sadly wanting. One of the merits of the plant is its easy culture. Plant it in earth of any reasonably good quality, and where there are

light and air for its nourishment, and it will grow so freely and rapidly, that it will soon screen from view any old or unsightly wall or building which it is desirable to hide away out of sight—and screen it, too, with a curtain of the richest vegetable drapery, which in its rich autumn tints will cause it to glow with a brilliancy of hue which is almost indescribable. For thus draping old walls, for garnishing balconies, for roofing in summer bowers and verandahs, it is one of the best creepers that can be planted, one qualification of no small importance being that it is utterly regardless of the rigours of winter. The only fault it has is that it is deciduous.

One instance in which we remember to have seen it used with remarkably good effect is in the establishment of M. Van Houtte, where the extensive range of offices, workshops, and other outbuildings are most symmetrically covered with it, and present a most charmingly ornate appearance. M. Rodigas, in one of the earlier volumes of the *Flore de Serres*, refers to a railway-station not far from Cassel, which, covered with this plant, excited the admiration of all who saw it; beautiful plants adorned the house, but its enchanting aspect was owing to the *Ampelopsis* which clothed it.

The Creeper is so adaptable in its habit, that it appears to constitute, according to the laws of architecture, an essential part of the construction. Nothing is more charming than its graceful festoons and its arabesques, so light that one might believe them to be painted, decorating the walls of red brick everywhere with their elegant curves. All the difficulty consists in maintaining the creeper within the boundaries which may have been traced for it. For that purpose, a single stock or stem only must be allowed to develop itself, and all the lateral shoots from this must be pinched off above their second or third leaves, for the whole length of the stem, so that it may form itself in reality into a beautiful garland of foliage. The lateral shoots may at length be allowed to throw down their branches.

No doubt other free-growing climbing plants might be treated in the same way. The newer more graceful *Ampelopsis tricuspidata* (*Veitchii*), and the *Wistaria sinensis*, for example, might be so trained with very good effect.—M.

VILLA GARDENING.

April.

MARCH is proving what might be termed a harassing month to Gardeners. It has been fine and open, and of a nature to invite to active operations in the garden; then comes a change to clouded skies, and cold, repelling winds, with snow, and indications that

winter is by no means at an end. These contrarieties may be but a part of the exemplification of the old saying that the best March is one that comes in like a lion, and goes out like a lamb.

Greenhouse.—The changes in the weather to which we have just referred have made it necessary for Villa Gardeners to be very careful in giving air to their greenhouses. There have been such spells of bright sunshine, that the house could be thrown open, and full streams of balmy air admitted. The next day it was necessary to keep everything as close as possible, so great and opposite was the change outside. This caution will be necessary through April, and especially so in the case of plants putting forth their young growths. When necessary to give air, it should be admitted on the opposite quarter to that where the wind lies, as cold draughts will stunt the growth of young shoots.

There are several things that can be had in flower in a greenhouse at this time of year. We lead the way with the *Camellia*, *Azalea*, and *Epacris*, of which latter there are several high-coloured as well as delicate-tinted varieties; *Chorozema*, *Genista*, *Cytisus*, *Spiræa palmata*, *Hoteia japonica*, *Hyacinths*, *Deutzia*, *Cinerarias*, *Primulas*, &c., follow, enough to make a charming display. One plant deserving a place in every villa gardener's greenhouses in spring is *Primula denticulata*, and its finer forms *pulcherrima* and *purpurea*. We have some plants of these primroses in 7-in. pots that are masses of bloom, and charming objects when associated with the other flowers named above. Should the weather be warm and April-like, plenty of air and an abundance of water will be needed. By picking off dead blossoms and decaying leaves, the plants will be greatly improved in appearance, and a pleasing arrangement of the plants materially assists in giving an attractive aspect to the house.

Seeds of *Thunbergia*, *Balsam*, *Egg Plant*, *Lophospermum*, and *Maurandya* may be sown, to give a few successional plants by-and-by. These are good old things, that are always useful and welcome. Young plants coming on into size, such as *Petunias*, *Pelargoniums*, *Fuchsias*, *Chrysanthemums*, &c., should be now repotted as required, and grown on as quickly as possible. The propagating-pit attached to the greenhouse will now be in full swing, especially as losses during the winter were the common lot, and vacancies have to be filled up.

Flower Garden.—Many a promise of beauty in the spring garden has been nipped in the bud by the cruel winter. Where we looked for beds of *Wallflowers*, *Daisies*, *Forget-me-Nots*, *Violas*, *Silene*, &c., we have little else than stunted and half-killed, if not wholly destroyed, plants. Those who were fortunate enough to

have sown some seed of *Bedding Pansies* and *Violas* in boxes in autumn, wintering them in cold frames, will now enjoy the reward of their thoughtfulness, for they will be very acceptable in the flower-garden. A bed of seedling *Primroses* under a south wall is full of nice plants, growing away strongly, that are being put into the decimated beds and borders. We can hardly compute our losses among hardy plants. Our collection of *Hepaticas*, that we had calculated on to be charmingly bright and pleasing this spring, have suffered much, and they are classed amongst the hardiest of plants. Those who have lost their stocks of ordinary bedding-plants can fall back upon such useful things as *Petunias*, *Phlox Drummondii*; dwarf *Nasturtiums*, *Dianthus Hedderwigii*, and the double *Indian Pinks*, *Centaurea ragusina*, *Lobelias*, *Zinnias*, *Stocks*, *Asters*, &c. Seeds of these sown at once, if not already looked after, will make a lot of very useful plants for putting into the beds at the end of May and the beginning of June. In the mixed border, *Crocuses*, *Hepaticas*, *Scilla sibirica*, *Anemone fulgens*, *Violets*, *Pulmonaria*, *Primroses* double and single, *Daisies*, &c., are supplying vernal tints, and along the lines of plants many other things are coming on to succeed them. By stirring the surface-soil, and adding a little top-dressing here and there, the progress of things will be accelerated, and their well-being assisted.

Cold Frames.—The cold frame should now be a great feeder to the Conservatory and Greenhouse. Those who grow a few *Pansies* in pots will find them very pleasing subjects just now. In early spring a few plants of what are termed the Show and Fancy *Pansies*, if in a cool frame, flower very finely, and with that regularity in the marking one misses in the open air on plants exposed to the sun. *Primula amena* and its new varieties—some of the latter are decidedly novel and very beautiful—are now coming on fast in cool frames, where they can remain till they throw up their flower-stems, and be removed to the greenhouse. Double and single *Primroses*, *Polyanthus*, *Triteleia*, *Narcissi*, *Myosotis dissitiflora*, *Anemone fulgens*, these and others are among the hardy subjects that can occupy a cold frame at this season of the year, and yield great enjoyment to the cultivator. *Violets* in pots should have a prominent place also.

During the time cold raw winds are blowing, and the heavens are dull, the lights may be kept close. Watering must be looked after, as the plants are all growing fast, and need to be kept moist at the roots. By the exercise of some forethought, the cold frame can be turned to excellent account, as a feeder to the Greenhouse nearly all the year round. Some plants of *Harrison's Musk* should be grown on, and clumps of *Minulus* that have been kept through the winter can be broken

up, potted, and kept growing, to flower in the cold frame during the summer, when the weather is too hot and sunny for them to do well in an ordinary Greenhouse.

Kitchen Garden.—Sowing is still the order of the day. A sowing of *Veitch's Perfection* or *Premier Pea* for small and of the *Ne Plus Ultra Pea* for large gardens can be made for succession twice during the month. Villa Gardeners often say that it is preferable to purchase plants of *Broccoli*, *Cauliflowers*, *Borecole*, *Savoys*, *Brussels' Sprouts*, and other round seeds, than to sow the seed and raise a crop for themselves. We advise them to sow for their own use; small beds of each will do, and they will be certain to get something worth planting out. *Carrots*, *Parsnips*, and *Beet* should be sown in drills for main crops; and *Radishes*, for succession. A little *Turnip* may be thrown in on a warm border; not forgetting the useful *Parsley*. Those who have raised a few early *Cauliflower* and *Lettuce* plants in heat should now harden them off, for going out of doors by-and-by. The principal crop of *Potatoes* should be got in. The hoe must be got to work while the weather is warm and drying; the act of stirring the surface-soil is very beneficial. In showery weather, if slugs are troublesome, a little lime scattered over the crops will check their destructive work.

Fruit Garden.—All the pruning should have been completed, but if any remain, let it be done without delay. It will do no harm to lightly dig or fork the ground between *Raspberry*, *Gooseberry*, and *Currant* trees; indeed, it will do much good. It also imparts to the garden a tidy appearance. *Strawberry* beds and rows of plants will be greatly benefited by some top-dressing, stirring the surface soil first, and then adding the mulching. Wall trees will soon be in full bloom, and arrangements should be made for covering the trees when frosty clear nights are imminent.—SUBURBANUS.

DOUBLE STOCKS.

IRRESPECTIVE of any kind of selection or manipulation for the purpose of specially promoting the production of double flowers, there is not a strain of double Stocks in existence that naturally produces more double flowers on the average than does the old Purple Queen, or, as it is here locally termed, the Twickenham Purple. From 70 to 75 per cent. I have regularly found to be the proportion of double flowers. The Scarlet Queen does not give such a high proportion of doubles, as its average is about 65 per cent. These kinds are much appreciated by market growers for cutting from to succeed Wallflowers,


as they furnish such a large quantity of sprays or branches of flowers. Of course, double kinds are most desirable, but, double or single, all are cut, and oftentimes none are left to give seed; this is, however, of little consequence, as good seed can always be had in the locality from some of the cottagers, who cultivate a few for that purpose. In gardens where it is desirable to secure good masses of flower during the month of May, these dwarf, scarlet and purple Stocks make very showy beds, but to be well done they should be planted out in the summer in the beds where they are to bloom. This arrangement, however, is difficult to carry out in beds specially devoted to bedding display.

Although not so valuable for market work, yet the Brompton Stocks are, perhaps, more favoured, especially by cottagers, who dearly love to have a few fine spikes of the deep scarlet Giant standing out in brilliant array in their gardens. Without doubt, a huge spike of either the scarlet or white double Brompton is a grand flower, and can scarcely be rivalled by any other hardy biennial. If these are largely grown to cut from, the leading spike is taken off before its fine qualities are developed, and the side shoots furnish but a meagre handful. The Brompton Stock should be grown only as a decorative border flower, and then, if the plant be robust, its rich and massive beauties are fully displayed. The white Brompton gives of double flowers about 50 per cent., and the best strain of scarlet about 40 per cent.

Intermediate Stocks are so commonly grown in pots, that it has got to be an article of belief that they can only be properly seeded in pots. This is, however, wide of the truth, as they seed well, and produce as large a per-centage of double flowers in the open ground as when grown in pots. To get a good plant in the open, however, it is necessary that they should be turned out from pots towards the end of April, as, if lifted from the seed-bed in the ordinary way they root badly, and do not readily get established. If potted up singly into small sixties, or two plants in a large sixty, and kept in a cold frame for winter, they will turn out in April with a good mass of roots, and not feel the removal. Intermediate Stocks, both white and scarlet, give from 75 to 80 per cent. of double flowers, and the proportion left for seed is few enough to pay for their cultivation for that pur-

pose. That well-known summer Stock, Mauve Beauty, has for several years well maintained its double character, invariably giving 75 per cent. of double flowers.—*A. D., Bedford, in Gardeners' Chronicle.*

GARDEN GOSSIP.

T a recent meeting of the Committee for the International Horticultural Exhibition proposed to be held in London in 1880, Sir Daniel Cooper, Bart., in the chair, it was unanimously determined that it is inexpedient to go on at present with the proposed Exhibition; and a resolution of adjournment for an indefinite period was consequently passed. At the same time, an explanatory letter to her Majesty's Commissioners, with whom negotiations had just been opened for the use of the South-Kensington site, was agreed to. The Committee, in this letter, point out that they have come to the conclusion that, on account of the continued commercial depression, they feel they would not, at the present juncture, be justified in entering upon a work the estimated cost of which will not be less than £15,000; but, though hesitating under present circumstances to incur this large expenditure, which would be necessary to carry out an exhibition at once creditable to the country and satisfactory to horticulturists, they are still of opinion that such an exhibition should be held in London, as soon as returning prosperity permits. They have consequently made arrangements by which the question can be resumed as soon as the aspect of public affairs is more opportune, and they have sought to engage the sympathies of her Majesty's Commissioners in reference to the use of the site at South Kensington—the Royal Horticultural Society's Garden—if it should not become otherwise permanently occupied, when the time of action arrives, so that the show, when it does take place, may be held thereon.

— AT the annual meeting of the INTERNATIONAL POTATO EXHIBITION, the balance-sheet showed a surplus of £18 11s. 8d. to be carried forward for the current year's expenses. It was resolved to hold an exhibition on September 17th and 18th, 1879, at the Crystal Palace. Mr. Alderman Hadley was re-elected President; and James Abbiss, Esq., J.P., Mr. Shirley Hibberd, and Mr. Peter McKinlay, Vice-Presidents; James Carter, Esq., Treasurer; and Mr. John McKenzie, Secretary. A schedule of prizes was agreed upon, and ordered to be printed and circulated among exhibitors. To meet a suggestion thrown out by Mr. Alderman Hadley at the last exhibition, that prizes should be offered for Potatos suitable for field-culture, classes have been made for the best dish of Paterson's Victoria, and also for the best dish of any white Regent.

— WITHOUT doubt, the RHAPHIS HUMILIS is one of the most graceful fan-leaved Palms in cultivation, and one of the rarest. Fortunately, it is possible to increase it by removing the suckers—rather a slow process, no doubt, but one sufficient in nurseries to keep up a stock of *R. flabelliformis*. Compared with this species, it is infinitely more graceful, and coming from China and Japan, it should be suited to the same comparatively low temperature. The stem is remarkably slender,

and so are the petioles, the former, as it were, a reed, and the latter like wires. The fronds are thin, almost papery, and their narrow segments, curving to the points, have quite the line of beauty. Together they form the neatest possible crown of foliage, and this on a dwarf stem, so as to form an elegant table plant.

— **MR. ROBERTS**, of Gunnersbury, points out that the present winter has tested the **HARDINESS OF BROCCOLI** to such a degree, as to give one a pretty safe guide for the future in making selections from the hardiest varieties. Different systems of culture, he observes, affect the hardiness of Broccoli more perhaps than any other vegetable of the Brassica tribe. To produce Broccoli plants of a hardy nature, the seed-bed should be in an open position and on a rather poor soil, and should be made as firm as for onions. The young plants should be well thinned out in the seed-bed, and no weeds allowed. The plants will then be dwarf and sturdy, and will lift with a mass of fibrous roots when large enough to be transferred to their permanent bed, which should be a piece of well-firmed land. Formerly, when practising in the North, he always found Broccoli sown in May and the beginning of June, and transplanted late in the season, hardier by several degrees than when sown in March and April, and he has known them, when treated as stated above, stand 34 deg. of frost with little injury. The following kinds have proved the hardiest at Gunnersbury this season:—Veitch's Self-protecting Autumn, Snow's Winter White, Adams's Early White, which stood fairly; Knight's Protecting, Harrison's Late White, and Wilcove's Improved. The three kinds last named, from late-sown beds and transplanted the beginning of August, have proved the hardiest, and with a spell of growing weather will yet give a fair yield.

— **MR. G. S. V. WILLS**, of the Westminster College, has just issued the first instalment of a series of **CHEAP BOTANICAL PLATES**, for medical students. The series consists of *Helleborus niger*, *Cheiranthus Cheiri*, *Cineraria*, *Tulipa Gesneriana*, *Crocus vernus*, *Galanthus nivalis*, *Lamium album*, *Lotus corniculatus*, *Atropa Belladonna*, *Malva sylvestris*, *Rosa canina*, and *Papaver somniferum*. Though not produced with the skill of a Fitch, they are fairly well drawn and coloured for the price, the parts of the flowers being given in detached figures. At the back is printed the name of the order represented, diagnostic characters, general characters, and remarks; and here is indicated the chief points a learner has to bear in mind. As a help to the botanical student, they will be very useful.

— At a recent meeting of the Royal Horticultural Society of Ireland, Messrs. Rodger, McClelland, and Co., of Newry, obtained First-class Certificates for two new plants, *CALCEOLARIA FUCHSIEFOLIA* and *DAPHNE JAPONICA MAZELII*. The former is an undescribed species, very distinct in habit and appearance, and a very free and persistent flowerer, continuing to bloom all through the winter months. The *Daphne*, which is no less remarkable for the exquisite fragrance of its flowers than for the profusion in which they are produced, has the further recommendation of being perfectly hardy, it being stated in an accompanying memorandum that plants of it have stood out-of-doors all through the past winter, close to where the Laurustinus and other things were killed to the ground. In addition to the

above, the same firm showed a nice panful of the pretty spring-flowering bulbous plant, *Freesia Leichlinii*, with a view of showing its free-flowering habit.

— **MR. CRUMP**, of Blenheim, attributes the **CUCUMBER DISEASE** to the use of dung in the compost. He says that for two whole seasons he was completely beaten by it, and could scarcely produce one fruit free from the gummy matter. Seeds and plants from far and near were repeatedly tried, and grown in heated pits, where Cucumbers had not been for years previous, but all failed alike. The roots were remarkably clean and healthy. "Hitherto," he states, "we had used a small quantity of leaves and stable-dung, prepared in the usual way, and placed on the bottom-heat pipes; but this commodity not being forthcoming at the right time, we were induced to put the soil on and plant without it, and the result being a splendid and continuous supply of fruit of the best quality.

— **M. DUCHARTRE** has recently called attention to a statement that **MELONS FROM FRESH SEED** bear a large proportion of male flowers and very few female flowers; while, on the other hand, seedlings raised from old seed bear many more female flowers than male. This fact is well known to our gardeners, who believe also in the utility of carrying the seed for some weeks in the waistcoat-pocket. *Appropos* of old melon-seeds, the "Philosophical Transactions," of 1742, record that one Secretary Hærcus, of Stockholm, finding that he had melon-seeds that were laid up in 1700, was curious to try whether they retained their vegetative quality; and accordingly, February 21, 1741, he planted twenty-four of them in a hot-bed, from which he had twenty-one good plants, which showed flowers before they began to branch, and though their branches were slender, yet they produced good melons early and in plenty.

— **THE** lovely **SAXIFRAGA BURSERIANA** is the earliest to flower of the Saxifrage family, blooming in February. It would be impossible to say too much in its favour. Specimens growing on the rockwork in the York Nurseries, about 6 in. in diameter, and quite hemispherical in shape, bore upwards of 100 buds and flowers. There are two forms of this Saxifraga; one has dull scarlet calyx or buds, and pure white flowers $\frac{3}{4}$ in. in diameter; in the other, the calyx or buds are greener, and the flowers larger, being $1\frac{1}{4}$ in. in diameter. The former is found on the Dolomite Mountains in the Tyrol; the latter is also found in the Tyrol, but much further south—near the Italian frontier. We have recently seen this plant very fine on the new rockwork at Chiswick Garden.

— **ONE** of the most remarkable of new orchids is **BOLBOPHYLLUM BECCARI**, now beginning to grow freely in Mr. Bull's establishment at Chelsea. Like *Phalænopsis* and some others, it is devoid of the pseudobulbous stems present in most orchids, and consists simply of roots issuing from a short non-thickened collar, which bears a solitary leaf, of immense size and substance, 20 in. long, and 15 in. broad. Many of the plants are pushing vigorously shoots from the stems just below the junction of the leaves, and so far have more the look of leaf-growth than bloom. The flowers are in dense cylindrical drooping racemes a foot long.

— **MR. SCOTT**, of Auchendennan, has recently discovered by accident the **HARDINESS** of **GARDENIA FORTUNEI**. A plant of this fine shrub, about 3 feet high, and growing in a 10-inch pot, was thrown on to the rubbish-heap. Six weeks afterwards, when the ground was bound hard with frost, and the foliage of plants all around was drooping, the plant of *Gardenia* was discovered, and was found to be the freshest evergreen about the place, although the ball was frozen through.

— **ACCORDING** to Karl Koch, the species from which our **CULTIVATED APPLES HAVE ORIGINATED** may be divided into the shrubby and the arborescent. The former, independently of their habit, differ from the latter in producing suckers, or at least in throwing up a number of shoots from the base of the stems, which may easily be detached with a portion of root. There are three of this group—the French Paradise, the Codlin, *Pyrus frutescens*, and the Doucin, or Sweetling, *P. præcox*. The true English Codlin may possibly be a native of this country. The Doucin differs essentially from the others in the hairiness of its young shoots, and is probably the same as *P. Sieversii*. A very interesting and good old variety of *P. præcox*, called in Germany the Fig Apple, was recently rediscovered and propagated by the late André Leroy, in whose catalogue it bears the name of Sans Queue; it is the same as the *P. dioica* of books, and is remarkable for its very small petals. Gesner first mentions it in the first half of the sixteenth century; according to him it grew in the vicinity of Zurich. Of arborescent apples there are three: *P. sylvestris*, *P. dasyphylla*, and *P. prunifolia*; to which may be added, though of less interest to the pomologist, *P. baccata*, and *P. spectabilis*. The three first form the centres of so many groups of varieties, but intercrossing has given birth to varieties which connect the whole. *P. sylvestris* (*P. acerba*) is very distinct from the other arborescent forms in its crowded branches, which often terminate in spines, and in other characters, particularly of the fruit, which is quite uneatable; it is, however, very near *P. frutescens*, and may possibly be an arborescent form of that species. The Calvilles, Codlins, Rose Apples, and other varieties, have descended from *P. sylvestris*; whilst *P. dasyphylla* is the mother of most of our Reinettes, and *P. prunifolia* of the Astracans, and the singular Ico Apple of the Russians.

— **THE** charming **INDIAN PRIMROSE**, *Primula rosea*, has been flowering both at Kew and at Glasnevin. The leaves are lanceolate, slightly spreading, finely serrate, brownish when young, and at length pale-green; the scapes rise to a height of 5 in. just above the larger leaves; the best umbels have six to nine flowers, four or five expanded at the same time, with corollas nearly $\frac{3}{4}$ in. in diameter. The buds are deeply coloured, and so are many of the flowers, while others shade off to the delicate tint of a Peach blossom. It grows in Kashmir at a height of 8,500 ft., where it flowers about the end of August, and is found also in Afghanistan.

— **THE** magnificent **SIKKIM RHODODENDRON HODGSONI**, a tree rather than a shrub in stature, with ample smooth and glossy foliage, silvery beneath, has been flowering freely this season in one of the cool conservatories at Glasnevin. The specimen is 12 ft. to 14 ft. high, well furnished, and carried no less than one hundred and sixty of its gorgeous flower-heads.

— **A** **PRESENTATION** TO **MR. WILLIAM HINDS** was made on February 17th, when a number of the principal gardeners of Liverpool and a few friends assembled at the Public Rooms, Aigburth, to present him, on the occasion of his leaving Otterspool, with a gold watch, as a slight recognition of his sterling worth, and the able manner in which he had represented Liverpool as a horticulturist.

— **AT** Kew, the **COLCHICUM LUTEUM** has been flowering in the Cape house. This plant is of great interest, as being the only yellow-flowered species. Though known from about 1840, when it was discovered by Griffith, its introduction was effected only about four years ago, and it has since remained extremely scarce. It belongs to the Mediterranean group of the genus, the flowers and leaves being produced together towards spring. The flowers, when expanded, are not quite $1\frac{1}{2}$ in. across; the colour either pale, or deep yellow. It is a native of Kashmir and Afghanistan.

— **A** **Reminiscence** of the **TULIP MANIA**, has lately been recorded in the *Deutsche Gärtner-Zeitung*. Two houses in the main street of Hoorn, about twenty miles from Amsterdam, were offered for sale for demolition. These houses were purchased during the Tulip trade which flourished from 1634 to 1637, with the proceeds of three Tulip bulbs! The record of this remarkable purchase was preserved in a stone inserted in the gable of one of the houses.

— **AT** a recent meeting of the Berlin Horticultural Society, two **NEW MINIATURE CONIFERS** were shown. One, called *Abies alba*, var. *Wörlitziana*, was raised from seed of the *A. alba* of Michaux (*A. laxa*, Ehrhart); this was between four and five years old, about 20 in. high, and of a beautiful, compact form, something like the Clau-brassil Spruce Fir. The other was a diminutive form of *Abies nigra* of Desfontaines (*A. Mariana*, Millor), ten years old, and only about a foot high. It was called *Abies nigra*, var. *Jühlkeana*.

— **WE** glean from the *Garden* the following particulars respecting **BEGONIA POLYPETALA**, a new tuberous-rooted species, from the Andes of Northern Peru, introduced to the nursery of M. Fröbel, of Zürich, with polypetalous anemone-like flowers, and which apparently promises to be a great acquisition to this increasingly popular class of plants. In Europe it grows and flowers in the winter. The bulbs begin to grow in August, and the first flowers appear in October, opening in succession until the month of January; during that time they are the most beautiful ornaments of the temperate house.

— **THE** **FERRUGINEOUS VARIETY** of **MAGNOLIA GRANDIFLORA**, *M. grandiflora ferruginea*, is much the most desirable variety of this noble evergreen. In severe winters, the other sorts, and especially the favourite Exmouth variety, is killed down to the ground, if not indeed killed outright, while, under similar circumstances, it usually happens that *M. grandiflora ferruginea* stands quite uninjured, and therefore we have come to regard it as the hardiest, the freest-blooming, and in every way the best variety of this grand American evergreen. We have noted its endurance for many years at the Knap Hill Nursery.



Pelargoniums:-

1. Amethyst. 2. Illuminator.

NEW SHOW PELARGONIUMS.

[PLATE 489.]

PELARGONIUMS are, generally speaking, so rich and varied in their colouring, that the materials available by artists fail to do them justice. It is so in this case, and notwithstanding that Mr. Rosenberg was enabled to prepare very fairly accurate portraits of the varieties here represented, the reproduction of his drawing by chromolithography fails much in regard to the brilliancy and general effectiveness of the colouring. With this explanation, we trust our readers will be able to realise the distinct character and striking beauty of these novelties, for the opportunity of figuring which we are indebted to Mr. C. Turner, of Slough.

AMETHYST (Fig. 1) is a decided purple, much more so than either *Blue Boy* or *Purple Gem*. If the centre had been pure white, it would have been the most attractive variety known,

but this is still left to be accomplished by the hybridiser. It is, however, much the best of its class, and is of dwarf habit, and a most profuse bloomer.

ILLUMINATOR (Fig. 2) may be shortly described as much the brightest-coloured variety which has yet been obtained with a clear white centre. For smoothness and refinement it has no equal, and it is a very effective variety, both for exhibition and the home stage. The colour is a brilliant carmine-scarlet, altogether unapproached by any pigment within reach of the colourist.

Both these varieties received First-class Certificates when exhibited before the Floral Committee of the Royal Horticultural Society last year, and from their high quality and distinctness of character, they well deserved that award.—T. MOORE.

HARDY CYCLAMENS IN POTS.

I WISH to say a few words to advocate the more extended culture of these lovely spring-blooming plants in pots, and with the addition of cold-frame shelter during the winter. I have to-day, March 10th, seen a lovely display of these flowers so grown in Mr. Barr's garden, at Tooting, and they were altogether so much more bright and beautiful, as compared with the same kinds which have been exposed on grass all the winter in the same garden, that one might almost be pardoned for doubting their identity. The kinds to which I allude are *C. coum*, *C. coum ibericum*, and the white form *C. coum Atkinsii*, the distinguishing characteristics of which may be tabulated as follows:—

1. *C. COUM*.—Leaves wholly green, flowers rosy crimson.

2. *C. COUM IBERICUM*.—Leaves green, marbled with silver-grey; flowers deep rosy crimson.

3. *C. COUM ATKINSII*.—Leaves green, marbled more or less with silver-grey; flowers white, with crimson spot at the mouth of the flower.

All have smooth rounded cordate leaves, the marginal denticulations being nearly obsolete.

It has been said that the "knowable of to-day becomes the unknown of to-morrow," so I have here set down what Mr. Barr showed me very clearly, in far less time than I have spent in the writing of it. He also pointed out some seedling intermediates, for example, *C. coum*,

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with slightly marbled foliage, and *C. Atkinsii*, with blush flowers—that is, white suffused with rose, these being the result of indiscriminate propagation by seed, on the part of our neighbours, the Dutch florists, who have done more towards destroying the identity of these and many other popular garden-flowers, than the whole army of English hybridisers put together. We may forgive them, however, for in breaking down nature's barriers of demarcation, they have not unfrequently added a varied beauty, far more precious to the great majority of gardeners and amateurs. "The happiness of the greatest number" is secured in this case, and thus far all is well.

But why should we seek to grow these kinds in pots and in frames, some may ask, when they are perfectly hardy, and we have the larger-flowered *C. persicum* in variety, and so eminently suitable for pot-culture? Well, I had thought of that too, but the plain fact is that one must serve an apprenticeship in the culture of it, and have heated houses to boot, ere one can turn out a respectable plant of *C. persicum*. To grow this plant really well is almost as much a specialty as the casting of church-bells, and the amateur who has only such protection to offer his pets as a cold frame

or two affords, if he admires the *Cyclamen*, had better leave *C. persicum* alone, and turn his attention to the hardy varieties I have named. Seedlings may be raised in heat, and afterwards be potted on and grown up to the blooming stage; but a few shillings will go a very long way in purchasing flowering bulbs, and then one has not long to wait for the satisfaction of seeing their flowers. One must, of course, admit that *Cyclamens* in the nooks of root-work, as so charmingly displayed in Mr. G. F. Wilson's garden at Weybridge, or on well-constructed rockwork, as the late respected Mr. J. McNab caused their beauty to appear in the Edinburgh Garden of Botany; or, perhaps, better than all, when seen nestling in the sweet copartnery of tender young grass and early daffodils on the unmown lawn, are singularly beautiful—singularly so, because unlike any other flower. And yet, if it so please you to grow them thus and thus, forget not that, grown in pots and sheltered in a frame, as I am so anxious to recommend, they throw their bright blossoms up taller and stronger, their foliage is fresher, and one can make more intimate pets of them, by bringing them into our room and window-gardens, at a time when domestic flowers are rare. A friend reminds me that a hardy *Cyclamen* in a pot seems to be analogous to a lark in a cage, adding that both are really more happy and beautiful when nestling at home on the cool turf. Nevertheless, I must record my own impressions, and, at least, draw the attention of those who have no root-work, or rock-work, or turf, to the possibility of growing these lovely spring flowers in pots; and if they achieve only a tithe of the success that Mr. Barr has done, they will, I am sure, be quite satisfied with having ventured on their culture in the way I describe.—F. W. BURBIDGE.

PEAR ROUSSELET DE RHEIMS.

PERVENTURE to bring to the notice of those of your pomological readers who may be located upon the New Red Sandstone formation, as in my own case, the merits of this old, but perhaps the most delicious, of all pears. The generality of pears and apples, as grown on this soil, are quite woolly in texture and flavourless, fit only for culinary purposes. To this rule there are, of course, a few exceptions, which, in this instance, is of such a

striking and remarkable character, as should rescue this pear from the oblivion to which it appears consigned, for I do not find the name in any trade catalogue.

The particular points in favour of this pear are flavour and annual productiveness. It has but one fault—want of size; but so also has Seekel, the only one to approach it in flavour.

The late Mr. R. Thompson, of Chiswick, in the *Catalogue of the Horticultural Society*, describes it as “peculiarly rich and sugary,” and it has both qualities in a very high degree, without the cloying and honied sweetness of the Seekel. *Rousselet petit*, *Rousselet musqué*, and *Girofle* are given as synonyms.

The tree, as growing here, on a wall with a west aspect, is a very moderate grower, producing freely an abundance of bearing wood, which never fails to bring a crop to perfection, in the end of September, when my employers and their friends (no mean judges) pronounce it to be the most delicious of pears. Surely such a fruit should not be elbowed out of cultivation by others possessing far less real merit, though they may have more novelty.—J. W. LAURENCE, *Newstead Abbey, Nottingham*.

CUCUMBER DISEASE v. MANURE.



REMARKING at p. 63 that Mr. Crump, of Blenheim, attributes the Cucumber disease to the use of dung in the compost, I beg to be allowed to say that I differ with him in that opinion, as I have proved by experience that both dung and leaves are powerful aids in Cucumber cultivation. If the use of manure is injurious, how comes it that Cucumbers succeed so well under the old hot-bed and three-light-frame mode of culture, where the accommodation of a Cucumber-house does not exist?

I am strengthened in my opinion that manure is not the source of the disease, by my experience during the last season, when I had charge of a house of Cucumbers that were planted on a bed of dung and leaves, about three feet deep and five feet wide; and when the roots began to push through, they were alternately top-dressed with horse-droppings and turfy loam, and were frequently watered with sewage water when heavily cropped. They were well supplied with atmospheric moisture. The minimum temperature was 65°, and when they were shut up and heavily syringed, the thermometer ran up over 90°. They came into bearing in May, and from then to the end of September about 400 fruit were cut from half a dozen plants; the variety was that Cucumber *par excellence* for all purposes, the Telegraph. Looking to the result, I do not think there was any cause to complain of dung having been used in their cultivation.—GEO. POTTS, Jun., *Epsom*.



CROTON APPENDICULATUS.

APPENDICULATE CROTONS.

AMONGST the many varieties of Croton —*Codiaeum variegatum*—that sent out by Messrs. Veitch and Sons as *C. appendiculatus* is one of the most remarkable on account of the singular structure of its foliage. It does not boast the gay colours of many of its congeners, having the leaves of an uniform green colour, but it presents other features in the appendiculate leaves which will secure it admittance to the collections of all true lovers of plants who can afford accommodation for it. It is a dwarf-growing kind, of a densely-branched habit of growth, and clothed with abundant foliage. "The leaves have a very marked peculiarity; the blade or lamina is divided into two segments, separated by a considerable interval; the segment next the petiole or base of the leaf is tolerably constant as to form; but the terminal one assumes an indefinite variety of

shapes, often of a most opposite character, both on the same and different plants. Thus we find well-defined ovate, obovate, rotundate, oblanceolate forms, and even peltate and reniform, and many modifications of them. The appearance presented by the entire plant, with all these associated varieties of form, is very peculiar, and peculiarly interesting. We owe this variety to the enterprise of Messrs. Veitch and Sons, of Chelsea, who obtained a certificate for it from the Royal Botanic Society in 1875.

Mr. W. Bull, of Chelsea, has introduced one of these appendiculate varieties, which he has called *C. picturatus*, and notes as coming from the New Hebrides. It is a highly coloured and effective plant, the leaves a foot and a half long, and about an inch broad, somewhat irregular at the edge, and with a tendency toward spiral contortion. The costa is bright



CROTON PARADOXUS.

red, and the surface is marked throughout in an irregular blotchy manner with clear yellow, passing to red. In certain stages of growth, leaves of a different character are produced; thus from one oblong peltate base the costa may be continued at the back like an excrement thread, at the end of which another elongated leafy portion, having a cupped or peltate base, is appended. The form of these parts is very variable, as in the preceding variety.

Another form of this group is the *C. paradoxus*, introduced from the South Sea Islands by Mr. Williams, of Upper Holloway. It is one of the narrow-leaved series, having the petioles purplish in the middle, and the linear-oblong leaf-blades 10 in. to 12 in. long, and about $\frac{1}{2}$ in. broad, and terminating in a terminal spiny point or horn. The variegation consists of yellow or cream-coloured stripes and spots, especially in the centre, on either side of the

costa, which is pink, and the central portion becomes suffused with a pinkish tinge. Some leaves are twisted in the centre, others are interrupted, the blade not being continuous throughout, but appendiculate. This is a compact and handsome form for table ornamentation.

Still, another of this set has been introduced, called *C. princeps* by Mr. Bull, and *C. mutabilis* by Mr. Williams. As the latter name implies, it assumes innumerable variations of character. Sometimes the leaves are lanceolate entire, 12 in. to 15 in. long, and $1\frac{1}{2}$ in. broad; sometimes they are interrupted about 6 in. from the base, and enlarge towards the apex into a broad, cup-like appendage, which continues in the form of a thread-like costa for 2 in. or 3 in., when a second appendage is formed, varying from 1 in. to 2 in. in length, and having a peltate base, the costa being continued in the form of a horn from the upper surface. The colour is a dark green,



CROTON MUTABILIS.

beautifully marbled with various shades of yellow and pink in the young state, and these take on, as the leaf becomes matured, brilliant tints of orange and magenta. The plant is very ornamental—one of the richest-coloured varieties in cultivation.

This group of appendiculate varieties commend themselves from the grotesque character which a well-grown plant presents, by reason of its many variations of form, in some cases also blended with a high degree of merit, as to colouration.—T. MOORE.

ON APPLE ORCHARDS, ETC.

WHAT the common Apple-tree is a native of the eastern hemisphere we have the authority of the earliest writers in Holy Writ, as well as of the naturalists of ancient Greece and Rome. The cultivated Apple was probably not very abundant at

Rome in Pliny's time, for he states that "there were some trees in the villa gardens near the city, which yielded more profit than a small farm, and which brought about the invention of grafting;" and adds, "There are Apples that have ennobled the countries from which they came, and our best varieties will honour their first grafters for ever." It must be confessed that Pliny has related fables as well as facts concerning the Apple—such as changing the fruit to the colour of blood, by grafting it on the Mulberry—now known to be a physiological impossibility. Columella, a practical husbandman, who wrote some years before Pliny, describes these methods of grafting, as handed down to him by those whom he calls the "ancients," besides a fourth method of his own, and a mode of inarching, or grafting by approach, "whereby all kinds of grafts may be grafted upon all sorts of trees." It is likely,

however, that the art of grafting, at the period in which he lived, was comparatively modern.

The making of cider from the apple was introduced into Britain by the Normans, who, it is said, obtained the art from Spain, where it is no longer practised. This liquor is supposed to have been first known, however, in Africa, from its being mentioned by the two African Fathers, Tertullian and Augustine, and was introduced by the Carthaginians into Biscay, a province unfavourable to the vine, on which account it became the substitute. The making of cider in this country is almost entirely confined to three or four of the western counties of England, a circumstance much to be regretted, considering the wholesome nature of the liquor, and the simple mode employed to make it. Some knowledge is, however, required in the selection of those sorts which should be crushed together, as all apples are not equally good for the purpose, the best being those of an astringent nature; besides, the strongest cider apples vary much in their power to develop alcohol by fermentation. The strongest cider, as a rule, comes from apples which contain the least amount of juice, hence the quality of cider is considerably improved by allowing the fruit to sweat and dry for a short time before being ground. After the crushing or grinding process, the pulp is generally laid aside for at least twenty-four hours, and turned occasionally, to allow fermentation to set in before the juice is expressed. The aromatic oil contained in the seeds is thus extracted, communicating its flavour to the mass.

The Apple is said to hold the proud position of the most popular of British fruits. None can be brought to so high a degree of perfection with so little trouble; moreover, the varieties are now all that can be desired, varieties calculated for almost every soil, situation, and climate, and yet, comparatively speaking, how few orchards are to be met with; they are confined to a few favoured localities, and appear to have been, since Evelyn wrote of one Richard Harris, a fruiterer to King Henry VIII., that the fields and environs of about thirty towns in Kent only were planted with fruit (from Flanders), to the universal benefit and general improvement of that county to this day; and by the noble example of my Lord Scudamore, and of some other public-spirited gentlemen in those

parts, all Herefordshire is become, in a manner, but one entire orchard. Lord Scudamore was Ambassador to the Court of France in the time of King Charles I., and having collected in Normandy scions of Cider apple-trees, encouraged the grafting of them throughout the county of Hereford. That the apple is still cultivated in Kent with consummate skill and intelligence there is no doubt, the great bulk of the fruit, however, being in demand for dessert and culinary purposes, so that very little attention is paid to the manufacture of cider, and such as does find its way to the retail dealers in liquors is made from a miscellaneous selection of apples crushed together, entirely regardless of the suitability of the fruit for cider-making purposes. It is this insipid beverage which is most frequently exposed for sale in London, under the name of "Devonshire cider." The sale of this bastard article has done infinite injury to the free development of cider-making as an industry in this country. The orchards in the Western counties are, with few exceptions, in a neglected condition, most of them seeming to bespeak on the part of the owner a degree of ignorance and carelessness truly lamentable; indeed, had it not been that Providence has endowed the Apple-tree with a long life, most farm-houses in Devon and Somerset would have stood minus a single Apple-tree at the present time. The making of cider is consequently on the wane, even in the favoured West, where Nature herself would grow Apples, if only man would plant, and afford the common protection and care necessary to the free development of the tree. If a law were enacted whereby tenant-farmers holding a lease for a certain number of years were compelled to plant and maintain an orchard in creditable condition during such lease, and in the case of annual holdings or short lease this were done by the proprietor, such a law would ultimately prove a source of profit and pleasure alike to both parties. Neither need the Orchard be strictly confined to the Apple; a well-planned and well-managed Orchard, of two to three acres, would grow a vast supply of other fruits and vegetables; in fact, sufficient produce might be sold from such an Orchard in ordinary seasons to pay the rent of a farm of forty acres.

The extensive cultivation of fruit would

ultimately greatly benefit the health and morals of the country, as well as add to the wealth and luxury of the people. It can give rise to no bad habits; but, on the contrary, sociability and temperance would be promoted by making a fruit-garden an appendage to every country dwelling. It is a well-ascertained fact that there are hundreds of acres of land in Great Britain and Ireland suitable for the cultivation of the apple at the present time, either entirely uncultivated or only partially so, and on which sufficient employment might be found for every available gardener, or garden labourer, in the three kingdoms. It may be argued that the apple crop is uncertain, and that every second or third year we have an almost entire failure; but I contend that if the cultivation of the apple once became universal in this country, we could generally calculate on an average crop, owing to the great diversity of soils and situations employed, and a thorough knowledge of the kind of apple best suited to such soil and situation. As it is, we are gradually becoming dependent upon foreign countries for our supply; this need not be. If due attention were paid to home culture, a few years would suffice to supply the home demand, and every man might enjoy his cup of cider. When Parliament shall enact such a law, there will be little need for temperance reformers.—R. BULLEN, *Glasgow Botanic Gardens*.

BEGONIAS FOR WINTER.

WE have found several varieties of the *Begonia* very useful during the past winter and spring, on account of their long continuance in flower. They are of easy growth, and not much liable to be attacked by insects. Cuttings should be struck in June, and potted into small pots, placed in close warm pits, until they have taken well hold of the soil, when they should be gradually hardened, so as to stand in a cold frame until the middle of September. They require to be regularly attended to as to watering, and shutting up in the afternoon, with sun-heat. In this way they will grow on into nice stiff plants. They should not be put into too large pots, but rather fed well with dung-water, as soon as the pots get well filled with roots.

B. sanguinea and *B. fuchsoides* are two very pretty and bright scarlets, and are much thought of for the hair, if cut before the blooms open, as they are then very effective.

B. nitida is almost always in bloom, and when it can be planted out and trained to a back wall, or on any portion where it can run, blooms may be cut from it on most days of the year, when it is kept in a proper temperature. *B. hydrocotylifolia*, *B. manicata*, and *B. hybrida multiflora* we find all useful, either as table-plants or for cutting from. *B. fuchsoides*, *B. sanguinea*, and *B. hybrida multiflora*, when the leading shoot is tied to a single central stick, and the straggling side-branches are pinched in, make very effective and neat plants. There are many other useful sorts, but these we have proved good, and can recommend them all,—A. H., *Thoresby*.

IRIS KÆMPFERI.


THIS fine Iris [two varieties of which have been figured by us in previous volumes] is comparatively unknown in this country, and therefore the acquisition by Messrs. Barr and Sugden of the seedlings raised at Leyden by Von Siebold, will render seasonable a few words upon its merits and proper usage. It is the most sportive of the Iris family, save the infinitely variable *I. germanica*, and as it is known on the Continent, and more especially in Holland, it may be considered a proper candidate for admission into the family of florists' flowers. It was originally introduced from Japan by Von Siebold, and is a native of East Siberia, from the Baikal and Dauria to Kamtschatka, the Amur district, and Korea, extending thence to the northern parts of Japan. Sir J. Hooker considers it synonymous with the earlier known *I. laevigata*.

In the standard books now current, *Iris Kämpferi* has no place. The reason is that the authors of those books have not grown it. On the appearance of the figure in *Illustration Horticole* (in 1857), I secured some roots, through the late Mr. Standish. The heavy soil of the garden wherein they were planted did not suit them, but they succeeded well in pots grown in the same way as *Iris reticulata*. Observation has taught me that *Iris Kämpferi* is as easy to grow as any Iris in cultivation; but its needs are definite, and it will not thrive anywhere and anyhow. I have made note of two particularly interesting features in the nurseries of Messrs. Krelage, of Haarlem. One

was a large collection of varieties of *Fritillaria Meleagris*; the other, a large collection of varieties of this splendid Iris. They are grown in pure sand, which is from time to time heavily manured, and their roots in summer reach the water. Now, there is never any need to lower the level of the land and bring in water to supersede hedgerows, in order to grow such plants as fritillarias or irises, or even hyacinths and tulips. A sandy loam will answer the purpose. A gravelly sand will answer the purpose. A peaty sort of Bagshot soil, with a sparkling preponderancy of siliceous grit in it, will answer the purpose. Let this be well dug and heavily manured once in five years. When the plants are in full growth, give them abundance of water. And thus you may, without doubt, grow to perfection *Iris Kämpferi*, and with it a host of good things that do but poorly under the prevailing system of the English garden. As to the hardiness of this Iris, who can doubt it, when it is seen to be a native of the country where is born and bred the dreadful East Wind. The secret of the success of many things grown in the neighbourhood of Haarlem is that the soil is sand containing a certain amount of humus, and the water is at such a depth that the roots do not touch it until they want it—that is, when they are in full growth, and then they can drink their fill, and by the aid of plenty form the embryo flowers for the next year. As regards the season of planting, imported roots may be planted now (April), as well as at any time.—S. H.—(Abridged from the *Gardener's Magazine*.)

EFFECTS OF THE WINTER.

AT STUDLEY.

 THE winter may have been said to have commenced here on November 11th, when we had a deep snow, and though it did not remain long on the ground, it kept snowing at intervals till the end of the following March. The lowest frost occurred here on the morning of December 25th, when we registered twenty-seven degrees; on the 26th we had a deep fall of snow, and on the 27th the thaw set in, and the snow went rapidly, leaving such things as Cabbage, Spinach, and even Broccoli looking remarkably well. The beginning of the year, however, set in with dry, frosty winds, which soon withered up the then fresh-looking winter crops. On January 12th we had another deep snow, and a rapid thaw afterwards, succeeded

by frost on the 14th. We had a deep snow again on the 18th, with frost day and night, which continued with more or less intensity till February 6th, when a thaw set in, and continued till about the 12th. Then frost with snow returned again on the 15th, and continued more or less to the close of the month, the thermometer standing near the freezing-point day and night. March came in with mild, open weather, which continued till the 12th, and then we had a continuance of frost and snow, with cold north-east winds to the end of the month.

It is to this frequent freezing and thawing that I attribute the heavy loss we have sustained among the Vegetables. We had Broccolis of all the leading sorts, in large quantities, on various aspects, not one of which is left. Fine young Cocoa-Nut Cabbages, from which we had been cutting till the end of the year, were all killed, and most of the Savoy stumps, and even the Brussels Sprouts, were greatly injured. The young Cabbage-plants, being mostly covered with snow, escaped with little injury, and are now (April 9th) beginning to grow pretty freely. I may mention, however, that at Sawley Hall, which lies somewhat higher than Studley, and in which the gardens are more sheltered, the frost was not quite so severe (twenty-five degrees on December 25th), and there Sutton's Late Queen Broccoli is all sound and good, while with me the same sort was all killed. I also noticed a large conical-shaped, blue-looking Cabbage, which the late Mr. Faviel brought from Copenhagen some years ago, on which a leaf was not singed, and which is now hearting-in and ready to cut—a useful variety in such a season as this, when our ordinary vegetables have suffered so severely.

Trees and shrubs do not seem to have suffered so much, but with the terrible lesson of 1861, when many shrubs and all the tender conifers were killed, we have since planted nothing but hardy things. Some Eucalypti on a wall have, however, been killed, and the cold winds of the end of March have made sad work with the Pampas Grass, the points of Laurel shoots, &c.; but these will, I think, recover.

Upon the whole, I think our prospects for a hardy fruit-crop this year are very good. Apricots are now coming into full bloom, and look strong and good, and there seems to be abund-



J. L. Macfarlane del

Nectarine Stanwick Elruge.

ance of bloom on all our trees. Though we are not safe till after June 1st, yet we may hope to escape any very severe frosts after this.—JOHN CLARK, *the Gardens, Studley Royal*.

AT EASTNOR.

What a winter we have passed through! Lying as we do here, high amongst the hills, our shrubs and coniferous plants have escaped almost uninjured—a striking contrast to 1860! Such tender representatives as *Pinus insignis*, *P. Montezumæ*, *Cupressus macrocarpa*, and *C.*

torulosa look as green as they did in the autumn. So much for fairly ripened growth. On low ground, *Arbutus Unedo* is browned; on high ground, it is safe. *A. Croomii*, *Andrachne hybrida*, *procera*, and *photiniæfolia* are also uninjured. Vegetables are sadly cut up. Out of 2,000 Broccoli, I have perhaps twenty. Brussels Sprouts and Cottager's Kale are the only greens that have stood. Fruit-crops are very promising, but now want free growth. Seven degrees of frost this morning (April 22).—W. COLEMAN, *Eastnor Castle Gardens*.

THE STANWICK ELRUGE NECTARINE.

[PLATE 490.]

IN the raising of Peaches and Nectarines, the late Mr. Rivers was very successful. The principal merit in his Peaches is earliness, but his Nectarines are fine, large, and handsome, and of exquisite flavour. Stanwick Elruge combines all the good qualities of the two varieties from which it takes its name, without the faults of the Stanwick, the latter being very liable to crack when ripening. It is a vigorous grower, flowers as profusely and sets as freely as the old Elruge; but the fruit

is much larger, a little less dense in colour, and occupies the front row in point of flavour. Being a little later in its ripening season, it may be planted as a successional companion to the *Violette Hâtive*, the Elruge, and other midseason kinds.—W. C.

To these remarks from Mr. Coleman we need only add that our figure was prepared from specimens which were kindly sent to us by him last summer, from the gardens at Eastnor Castle, near Ledbury.—T. M.

THE HOLLYHOCK.



IF all the flowers that adorn our gardens in the wane of summer, the Hollyhock is among the most conspicuous, if not without a rival, for effect in the background of border flowers. The front ranks may be neat and natty, as become those placed near the eye, a blaze of beauty without a shadow; and the middle-distance may be made gay, with the Dahlia staring with all its eyes open to be noticed, and here and there a gaudy Sunflower or a Monkshood, to set off smaller things to better advantage, the yellow of the Sunflower and the blue of the Monkshood relieving the stiffness of the oft repeated Pelargoniums, and other bedding plants (for the pretty blues of the dwarf *Lobelias* are all too small for this kind of work, although they are invaluable for edgings everywhere); but behind the Dahlia there should be found a place for Hollyhocks, for they come in at a very needful time, and as they do not spend all their strength at once, but flower successionally, we have the pleasure of their company long after the time when summer flowers are gone to seed.

There was a time when the Hollyhock was propagated by buds and by division, in order to get the fine double varieties true to name. Mr. Pince, of the Exeter Nursery, showed me a choice collection of these grown to perfection in a sheltered place, which, on account of their great leverage, was necessary, for it is no easy matter to support stems 6 ft. to 9 ft. high when fully exposed. This was some 25 years ago, and although I have visited many noted flower gardens since, I have never seen Mr. Pince's Hollyhocks surpassed, or even equalled. The cost of the plants, and the preparation of the soil by trenching and manuring, might hinder some, and the cost of tall stakes in certain localities might deter others, from indulging in such a hobby; but there is an easy way to get cheap plants, so that the grand flower-border may not be destitute of its distant ornament. It is scarcely too late to recover lost time with the Hollyhock, for when I took charge of the garden at Alderley, Cheshire, I arrived in March at the scene of action, and with my hands empty, for the winter had done its worst. I


had to buy a few bedding-plants, to propagate from, and had to have recourse to seeds for most things, in order to get beds and borders filled within as little time as possible. Some old Hollyhocks in an out-of-the-way corner, which had run up high, and taken root low, were as far as they went invaluable; but it was to the Hollyhock seed that I trusted, and even late as it was when they were sown, they flowered well the first year. What was thus done forty years ago may be repeated—at least it should be tried, for the seed is cheap, the treatment is thoroughly understood, and any one may prophesy that if beds and borders are to be filled this year with flowering plants, there will be great need of calling to the rescue Biennials which flower the first year. The secret of success is to sow in a gentle bottom-heat, and to get the plants strong before they are finally transplanted, just as is done with early Cauliflowers. The fault of Biennials flowering the first year is thus turned to account. On the other hand, many Annuals treated as Biennials, by being sown before winter, make nice, stiff, short-jointed plants, and flower early. For example, the pretty *Saponaria*, when only about a couple of inches high, forms a perfect mantle of flowers, but when run up in summer, drawn, lanky, and lean-looking, one would scarcely know it.

People seem to forget the management of the Californian annuals, and their wonderful effect after mild winters or under a cold frame. In the Chiswick Garden, in the olden time, it was not so—in the days of Lindley, Munroe, and Thompson; and many good gardeners carried away ideas from Chiswick, and repeated them elsewhere with credit. Many plants when grown gross are unsightly, and when stunted are handsome. *Dielytra spectabilis*, when first grown in small pieces which were rather costly, was elegant, but when fed to excess it was scarcely worth growing; and one might point to many choice gems that adorn our gardens *crying back*. Even through the purest strains there runs some gross alloy—some remnant of the wild. That most useful yellow Feverfew, comes true from seed, against all rule and order, as taught in days gone by; but it asserts its claim now and then, and shows the vulgar green it wore before the change came over it. It, too, is an excellent example of

what may be done by a seed-pan in heat, bringing spring and summer a month or six weeks sooner than their appointed time, for under glass at this season it is a perpetual spring, with not a stormy gust to break the charm.

A single seed-pan a foot across will hold 150 plants, about an inch apart, and that number of young hollyhock plants in spring will make no small display in autumn, if well treated. The bedding system has nearly driven out the seedlings, by introducing greenhouse plants struck from cuttings ready for immediate effect. I recall seeing a piece of rockwork in a garden in the Staffordshire Potteries. The pattern seemed taken from a mole-hill, and the rock was composed of broken crucibles; but the whole was cropped with Sweet Williams, and there was nothing to be seen but that fine old favourite flower on all sides, and that was of all hues and in great abundance.—ALEX. FORSYTH, *Salford*.

BAMBOO SHADING.

 THE necessity for using some kind of shading for our glass-houses during the bright summer weather, in order to intercept the fiercer of the solar rays, is well known to cultivators, and various expedients are resorted to, various means and materials employed to effect the desired object. The chief difficulty experienced arises from the fact that the lighter fabrics, which are the most suitable, are not very durable, and hence shading becomes rather costly.

The bamboo shading represented in the accompanying figure is a new candidate for popular favour, and from what we have seen of a similar mode of shading common on the Continent, where the material consists of strips of wood fastened together by ties, we have great hopes that the bamboo will answer, as it should be both light and durable. If, as now made, it should prove a little too dense, this may be rectified by using a thicker string as a binding material.

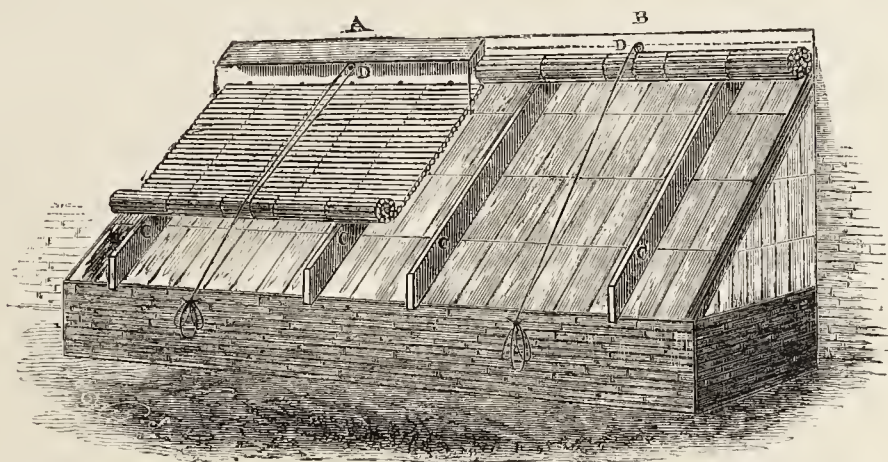
This Bamboo shading consists of light bamboo rods, a little stouter and stronger than reeds, varying from $\frac{3}{16}$ to $\frac{3}{8}$ -in. in diameter, the smaller size alternating with the larger size, while stouter rods, $\frac{3}{4}$ -in. thick, are interspersed here and there to strengthen the whole, inter-

laced about every 9 in. apart with a coarse, strong, and durable twine, made from the outer husk of the Cocoa-nut, in widths of from 8 ft. to 10 ft., and in lengths as required. The rods when put up run horizontally; the mat, being perfectly flexible and very light, can, when in use, be easily rolled up by a cord in the usual way.

Bamboo rods are nearly as light as reeds, therefore there is no fear of glass breakage, yet they are too substantial and stiff to allow of the wind getting beneath and doubling them up. Bamboos, being coated externally with a polished siliceous glaze, are strengthened, stiffened, and rendered waterproof and durable. A watertight covering is, however, necessary to protect the mats when rolled up from wet, which, though it would not damage the rods, would in time rot the fibrous interlacing twine; the latter, however, is very wiry, dries easily, and will

fruit blossom. In full summer they may be used, again, as a shade to protect, out-of-doors, tender plants from scorching sunshine or sharp keen winds. When used outside walls and windows, facing south, they form an admirable shade in summer tropical weather, where the full sunshine would render the interior of the apartments inconveniently or injuriously hot or light, with, however, this advantage, that, while conferring coolness, they admit a subdued light and give a pleasing brightness, far preferable to the gloom and shade of closed shutters and darkened windows.

In the woodcut given below, the bamboo mat is shown partially unrolled at A, with the box at top for its protection, the mode of rolling up, and the staples, at the bottom of the box inside, to which the upper edge of the mat is attached by stout twine




stand a great deal of wet before rotting. Each rod is kept a little apart by means of the twine, hence there are little interspaces allowing a small portion of the sun's rays to pass inside, whilst others are broken up and somewhat reflected by the glossy sides of the rods; thus scorching is done away with, whilst a large amount of diffused light is admitted. The material is very durable; and the mats cannot be doubled up by the wind. Being light, they are easily rolled up, and in consequence of their stiffness, wind up easily on a couple of bearers, 12 in. or 18 in. above the glass, thus admitting a cool current of air between mat and glass. All the fittings they require are a box at the top to keep away wet, staples screwed in above to hold them up, a screw pulley, and a wooden roller.

From spring frosts, these mats, suspended in front of and a little distance from the wall, will form an admirable protection for wall-

at B, the cover of the box has been removed, to show the mat rolled up when not in use; cc are the bearers upon which the mat is supported, ten to twelve inches above the level of the glass; dd, the screw pulleys round which the cords run which pull up the mats. To let down the shading, the cords which have been fastened to the hooks placed in the front wall below the glass are loosened, when the mats will fall down by their own weight. In rolling up again, the cord must hang straight down the middle of the mat, and should be pulled up steadily and fastened. The mats are fastened above to five or six staples, firmly driven in at the bottom of the box-cover inside, by tying to them the thick bamboo at the end of mat with strong twine. It is recommended to have a wooden roller tied by string to the lower end of the mat, to make it roll up more easily.—T. MOORE.

NATIONAL AURICULA SHOW. SOUTHERN SECTION.

HE show of the Southern Division of the National Auricula Society, which has been held this year in the garden of the Royal Horticultural Society at South Kensington, took place on April 22nd, and was altogether a successful meeting, thanks to the energetic labours of the Honorary Secretaries, Mr. E. S. Dodwell and Mr. J. Douglas, and the hearty support of the growers of these flowers—even from the far north. The Rev. F. D. Horner was again to the front in the amateurs' division, and Mr. Douglas and Mr. C. Turner both showed well, the collection of fifty set up by the latter being in every way a model of tasteful and effective arrangement. It is gratifying to find that new exhibitors are springing up, and we may trust they will become still more numerous in the future. The show was visited by a crowded and fashionable company. The prize-list and the names of the winning flowers are given below:—

Class A. 12 AURICULAS.—1st prize to the Rev. F. D. Horner, Kirkby Malzeard, Ripon, for Sapphire (Horner), purplish violet self, Freedom (Booth), Smiling Beauty (Heap), Ajax (Horner), a grey-edged flower in the way of Sykes' Complete, Erebus (Horner), a very dark self flower, but rather small in the paste, and scarcely pure enough, Lancashire Hero (Lancashire), Prince of Greens (Trail), George Lightbody (Headley), Frank Simonite (Simonite), Champion (Page), John Simonite (Walker), and Pizarro (Campbell); 2nd, Mr. James Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Iford, for Marquis of Lorne (Campbell), Glory (Taylor), Meteor Flag (Lightbody), George Lightbody (Headley), Col. Taylor (Leigh), Topsy (Kay), Alex. Meiklejohn (Kay), True Briton (Hepworth), Beauty (Trail), Lancashire Hero (Lancashire), Admiral Napier (Campbell), and Smiling Beauty (Heap); 3rd, Mr. Ben. Simonite, Rough Bank, Sheffield, for C. J. Perry (Turner), Prince of Greens (Trail), Metropolitan (Spalding), Frank Simonite (Simonite), a crimson self seedling, in the way of Marquis of Lorne, but darker, John Waterston (Cunningham), Ajax (Horner), Richard Gorton (Simonite), a good, medium-sized, pure, green-edged flower, with black body-colour, and rather pointed petals, Samuel Barlow (Simonite), grey-edged, William Bradshaw (Simonite), Lancashire Hero (Lancashire), and George Lightbody (Headley); 4th, Mr. Turner (Slough), for Violet (Moore), a very old grey-edged variety, Memnon (Turner), a dark maroon self, Arabella (Headley), white-edged, Clipper (Turner), a good dark-purple maroon self, in the way of Sims' Eliza, but with mealed foliage, Miss Jeffery (Jeffery), grey-edged, Pizarro (Campbell), Col. Champneys (Turner), C. J. Perry (Turner), Sir Henry Havelock (Jeffery), grey-edged, Mrs. Purves (Turner), grey-edged, Peacemaker (Turner), and General Neill (Trail).

Class B. 6 AURICULAS.—1st prize to the Rev. F. D. Horner, for Ruby (Read), dark maroon self, Smiling Beauty (Heap), Catherina (Summerscales), Prince of Greens (Trail), George Lightbody (Headley), and Lancashire Hero (Lancashire); 2nd, Mr.

Ben. Simonite for the dark seedling self before mentioned, Prince of Greens (Trail), Metropolitan (Spalding); Frank Simonite (Simonite), Richard Gorton (Simonite), and George Lightbody (Headley); 3rd, Mr. James Douglas for Smiling Beauty (Heap), Pizarro (Campbell), John Waterston (Cunningham), Topsy (Kay), Alex. Meiklejohn (Kay), and Admiral Napier (Campbell); 4th, Mr. Turner for St. Augustine (Cunningham), green-edged, Mrs. Sturrock (Martin), Colonel Champneys (Turner), Omega (Turner), the white-edged variety certificated last year, C. J. Perry (Turner), and a grey-edged seedling; 5th, J. T. D. Llewellyn, Esq., Ynisiygerwn, Neath, for Earl of Errol (Dickson), green-edged, Colonel Champneys (Turner), Marquis of Lorne (Campbell), Topsy (Kay), C. J. Perry (Turner), and a grey-edged seedling.

Class C. 4 AURICULAS.—1st prize to the Rev. F. D. Horner, for Lancashire Hero (Lancashire), John Simonite (Walker), Ringdove (Horner), a splendid self, intermediate in colour, between Turner's C. J. Perry and Campbell's Pizarro, and a seedling; 2nd, Mr. Ben. Simonite for Colonel Taylor (Leigh), George Lightbody (Headley), Frank Simonite (Simonite), and a rich violet-coloured seedling self; 3rd, Mr. James Douglas, for Topsy (Kay), Earl Grosvenor (Gairns), Lovely Ann (Oliver), and George Lightbody (Headley); 4th, Mr. Turner, for Colonel Champneys (Turner), Mrs. Sturrock (Martin), Clipper (Turner), and a seedling; 5th, Mr. R. Dean, Ranelagh Road, Ealing, for Robert Trail (Lightbody), Marquis of Lorne (Campbell), C. J. Perry (Turner), and Duke of Cambridge (Dickson); 6th, J. T. D. Llewellyn, Esq., for Colonel Champneys (Turner), Alderman Wisbey (Headley), Catherina (Summerscales), and a seedling.

Class D. 2 AURICULAS.—1st prize to the Rev. F. D. Horner, for Smiling Beauty (Heap), and Lancashire Hero (Lancashire); 2nd, Mr. Ben. Simonite, for George Lightbody (Headley), and Onwards; 3rd, Mr. James Douglas, for Smiling Beauty (Heap), and George Lightbody (Headley); 4th, T. E. Lloyd, Esq., Bedford Villa, Woodford, for General Neill (Trail), and Marquis of Lorne (Campbell); 5th, Mr. Turner, with Colonel Champneys (Turner), and C. J. Perry (Turner); 6th, J. T. D. Llewellyn, Esq., for C. J. Perry (Turner), and Inspector (Llewellyn).

Class E. 1 GREEN-EDGED AURICULA.—1st prize to the Rev. F. D. Horner, for Anna (Trail); 2nd, J. T. D. Llewellyn, Esq., for a seedling in the way of Dickson's Duke of Cambridge; 3rd, Mr. James Douglas, for Lady Richardson (Gairns); 4th, Mr. B. Simonite, for Talisman; 5th, Mr. B. Simonite, for Anna (Trail); 6th, Rev. F. D. Horner, for Anna (Trail); 7th, Mr. Douglas, for Apollo (Beeston); 8th, Mr. B. Simonite, for Prince of Greens (Trail).

Class F. 1 GREY-EDGED AURICULA.—1st and 2nd prizes to the Rev. F. D. Horner, for Lancashire Hero (Lancashire); 3rd, Rev. F. D. Horner, for Samuel Barlow (Simonite); 4th, Mr. Douglas, for George Lightbody (Headley); 5th, Mr. Douglas, for the same; 6th, Mr. Douglas, for Alex. Meiklejohn (Kay); 7th, the Rev. F. D. Horner, for George Lightbody (Headley); 8th, Mr. Douglas, for Alderman C. E. Brown (Headley).

Class G. 1 WHITE-EDGED AURICULA.—1st prize to the Rev. F. D. Horner, for John Simonite (Walker); 2nd, Mr. Douglas, for Anne Smith (Smith); 3rd, Rev. F. D. Horner, for John Simonite (Walker); 4th, Mr. Douglas, for Glory (Taylor); 5th, Rev. F. D. Horner, for Smiling Beauty (Heap); 6th, Rev. F. D. Horner, for Anne Smith (Smith); 7th, Mr. B. Simonite, for Frank Simonite; 8th, Mr. Douglas, for Anne Smith (Smith).

Class H. 1 SELF-AURICULA.—1st prize to the Rev. F. D. Horner, for Pizarro (Campbell); 2nd, Mr. Douglas, for Marquis of Lorne (Campbell); 3rd, T. E. Lloyd, Esq., for Marquis of Lorne; 4th, Mr. Douglas, for Marquis of Lorne; 5th, Rev. F. D. Horner, for Metropolitan (Spalding); 6th, Mr. R. Dean, for Pizarro (Campbell); 7th, Mr. Douglas, for Topsy (Kay); 8th, Mr. Douglas, for Eliza (Sims).

Class I. 50 AURICULAS, including ALPINES.—1st prize to Mr. James Douglas, for a fine collection of stage varieties only, including most of the leading varieties previously mentioned, together with Campbell's Green-edge, Lord Clyde (Lightbody), Lady Sophia Dumaresque, Lady Sale (Smith), Confidence (Campbell), Vulcan (Sims), Prince of Wales (Ash-ton), Complete (Sykes), Formosa (Smith), and Marie (Chapman); 2nd, Mr. Turner, for a collection which also did not contain any Alpines, but which was rich in self-coloured flowers, such as Calypso, Royal Robe, and Clipper, all raised by the exhibitor; Marquis of Lorne (Campbell), Mrs. Sturrock (Martin), Prince Alford (Turner), Pizarro (Campbell), Topsy (Kay), and Eliza (Sims)—and amongst other sorts not previously mentioned were Rev. Geo. Jeans (Trail), James Douglas (Turner), President (Simpson), Miss Giddings (Read), Phoebe (Turner), Unique (Dickson), Ensign (Turner), Drake Lewis (Turner), Lady Ann Wilbraham (Trail), and Star of Bethlehem (Lightbody); 3rd, J. T. D. Llewelyn, Esq., who included in his collection a few not previously mentioned, including Apollo (Hudson), Miss Headley (Headley), Blackbird (Spalding), Highland Queen (Horsfield), Ellen Lancaster (Pohlman), Pillar of Beauty (Hughes), Garland (Smith), Petronella (Headley), Bright Phœbus (Wyld), and Ne Plus Ultra (Smith); 4th, Mr. R. Dean, whose collection included some remarkable new double-flowered varieties, as Emperor, maroon purple, Majestica, purplish lilac, Purpurea, an intermediate colour between the previous two, Lilacina and Yellow Prince.

Class K. 12 ALPINE AURICULAS.—1st prize to Mr. Turner, for Mrs. Carter, Dr. Denny, Sensation, Mrs. Llewelyn, Troubadour, Prima Donna, Mrs. Taplin, Selina, Slough Rival, Evening Star, and Unique, all raised by the exhibitor, and Diadem, a rich crimson-shaded flower, raised by Mr. Gorton,—of the first-named batch, Prima Donna, Unique, and Dr. Denny are exceptionally fine, and richly coloured; 2nd, Mr. J. Douglas, for Florence, Silvia, and Prince, large dark selfs, and three charming shaded seedlings, one showing a distinct rich red edge, all of his own raising, Beatrice and Selina (Turner), George Lightbody and Diadem (Gorton), Mrs. Meiklejohn (Meiklejohn), and Mrs. Reed,—the shaded seedlings are the produce of a cross between Mrs. Meiklejohn and Gorton's Diadem; 3rd, Mr. R. Dean, who had eight of his charming laced varieties, Ovid and Colonel Scott (Turner), and a couple of rich, dark seedlings of good form.

Class L. 6 ALPINE AURICULAS.—1st prize to Mr. Turner, for Mrs. Llewelyn, John Ball, Evening Star, King of the Belgians, a rich shaded flower, A. F. Barron, edged with rosy manve, all of his own raising, and Gorton's Diadem; 2nd, J. T. D. Llewelyn, Esq., with Turner's Dolly Varden, Nimrod, Diana, and Mrs. Llewelyn, Meiklejohn's Mrs. Meiklejohn, and a seedling; 3rd, Mr. Douglas, with Florence (Douglas), Diadem, and George Lightbody (Gorton), Beatrice (Turner), a large purple-shaded flower with white centre, Bismark, and a seedling; 4th, Mr. R. Dean, with all edged flowers of his own raising—Troilus, white-edged, Mrs. Moore, shaded dark-edge, Imogen, pale rose-edge, Charmer, pale flesh-edge, Cymbeline and Duchess of Teck, pale red-edge.

Class M. 1 ALPINE AURICULA.—1st prize to Mr.

Douglas, for Gorton's Diadem, in grand form; 2nd, Mr. Turner, for Duchess of Connaught (Turner), a rich reddish maroon shade; 3rd, Mr. Turner, for Unique (Turner), a pale form of Diadem, and very beautiful; and 4th, Mr. Turner, with Susie Matthams (Turner), a beautiful rosy-purple shaded flower.

The premier Auricula, selected from amongst the whole of the plants exhibited, was the grey-edged George Lightbody (Headley), shown by the Rev. F. D. Horner, who gained the same prize last year, with the same variety, which had a truss of nine pips on that occasion, and ten on the present.

Class N. 6 POLYANTHUSES.—1st prize to Mr. James Douglas, for an unusually strongly-grown set of plants, consisting of William IV. (Sanderson), George IV. (Buck), Cheshire Favourite (Saunders), as usual, the most refined, President (Hilton), Exile (Crownshaw), and a fine variety named after Mr. Horner, which needs only a richer lacing to make it a perfect flower; 2nd, J. T. D. Llewelyn, Esq., for the five first-named sorts in Mr. Douglas' group, and Smith's Formosa; 3rd, Mr. R. Dean, for George IV., William IV., Exile, Hufton's Earl of Lincoln, and two promising seedlings.

Class O. 2 POLYANTHUSES.—1st prize to Mr. Douglas for fine examples of Buck's George IV., and Crownshaw's Exile; 2nd, J. T. D. Llewelyn, for William IV., and Cheshire Favourite; 3rd, Mr. R. Dean, for Bullock's Lancer, and a seedling.

Class P. 1 POLYANTHUS.—1st prize to Mr. Douglas for Buck's George IV.; 2nd, to Mr. Smith, for his seedling, Duke of Portland, a somewhat clouded flower; 3rd, Mr. Douglas, for Bullock's Lancer; 4th, Mr. R. Dean, for Cheshire Favourite.

Class Q. 6 FANCY OR SELF POLYANTHUS.—Mr. R. Dean was the only exhibitor in this class, and showed Ambassador, large, sulphur; the Bride, pure white; Buttercup, clear yellow; Prince Charming, flaked; Ealing Crimson, very rich; and Monarch, dark crimson.

Class R. 1 FANCY OR SELF POLYANTHUS.—Mr. R. Dean was 1st, with a very fine white seedling; 2nd, with a large sulphur seedling; 3rd, with Robusta alba, a fine white flower; 4th, with a handsome straw-yellow seedling.

Certificates were awarded to the Rev. F. D. Horner, for Ringdove, a lovely self-coloured flower, intermediate between C. J. Perry and Pizarro; to J. T. D. Llewelyn, for Grey Friar, a very large, grey-edged flower, with a dark-purple body-colour, and a rather weak tube; to Mr. Turner, for Alpine A. F. Barron, a rosy mauve-shaded flower; and for Alpine Duchess of Connaught, a rich, reddish, maroon, shaded with rosy violet.—W.

THE KAKI FRUIT OF CHINA AND JAPAN.

(DIOSPYRUS KAKI.)




SEVEN specimens of this tree have produced fruit under cultivation in this country, it would be yet more interesting to learn if it really promises to become a permanent addition to our orchard-house fruits. The fruit is brought down from the Chinese ports to Singapore every year, and fine ripe specimens, reminding one in size and colour of a smooth red Tomato, are sold in the streets or fruit-shops at a cent. or two each. They are

perfectly soft and ripe, and are packed so carefully for the voyage in soft tissue-paper that the bloom is not removed. They have a flavour peculiarly their own, something like that of a ripe Apricot, but more juicy, and with but very little of that astringent after-taste which was, I believe, rather too apparent in the case of the examples shown before the Fruit Committee at South Kensington, two or three years ago. It fruited five or six years since in the Jardin des Plantes in the open air, but I believe the orchard-house or vinery will be the best situation for it in this country. There are many varieties. That which fruited in the Jardin des Plantes was a seedless form, and was named *D. costata* by M. Carrière, who published a drawing of it at the time in the *Revue Horticole*. The varieties I have tasted abroad had from three to eight dark brown, kidney-shaped seeds, embedded in the rich orange pulp. The fruit and glossy foliage of this plant are so distinct and ornamental, that it seems to me worth cultivation, even although the flavour may not prove to be quite so delicious as those ripened under a sub-tropical sun. The tree may be propagated by layering, although the Chinese and Japanese graft the superior varieties on stocks of less desirable kinds.—F. W. BURBIDGE.

VILLA GARDENING.

May.

ILLA gardeners still wait with some anxiety the genial, growing spring weather that should prevail at this season of the year. It is almost impossible to carry on out-door gardening operations with anything like pleasure, and those who have sowed their seeds find that many of them rot in the ground; or if they grow, it is with a kind of holding action, so damp, cold, and uncongenial is the soil. Day by day the villa gardener waits for warm, open weather, and clear, bright, invigorating sunshine, till hope so long deferred maketh his heart well-nigh sick. It is very slow to come; but surely it will burst upon us at no great distance, else May will scarcely come in wreathed with flowers, and with what the poets have termed "a light and laughing look of love."

Greenhouse.—The late spring has caused *Hyacinths* to hold on with unusual endurance. It is wrong to plant them out-of-doors in a rough fashion while cold winds blow and sleet falls, after having been kept warm and comfortable in a greenhouse. They should be put away in a sheltered place, and not neglected till they can be planted out in the border, to light up unoccupied spots in springs to come. *Narcissi*, *Tulips*, *Scillas*, &c., may be similarly

treated, and they need not be thrown away, for if planted out properly, they thrive well in the future. As hard-wooded, shrubby plants find a place in most greenhouses, it may be remarked generally that they will now want plenty of air, and any specimen plants should be shaded from the sun, to prolong their beauty and freshness. *Epacris* that have made long shoots, and other plants similarly lanky in appearance, should be cut back, to bring them into fair proportions; and when they break into growth, and the young shoots increase in size, they should be thinned as desired, tied-out to get the plants into a good shape, and the plants shifted if they require it. All young plants will be making a free growth, and it is requisite that space be given them in which to grow; plenty of air should be afforded, but cold draughts avoided; the shoots stopped and tied-out as required, and watering well attended to. *Camellias* and *Azaleas* that have made their young shoots require ventilation, as a hardening influence to fit them to go out of doors by-and-by, to mature their buds. Of soft-wooded plants coming on into bloom for the summer service, there are many. *Pelargoniums*, *Mimulus*, *Fuchsias*, *Petunias*, *Heliotropes*, and others, make capital plants for keeping up a display during the summer, if shifted to grow into size, and occasionally stopped, to grow into a handsome shape. By stopping some more closely than others, a succession of bloom is provided. *Dielytra spectabilis*, *Deutzia gracilis*, *Hoteia japonica*, *Anemone fulgens*, *Primula denticulata*, and its varieties, *Dodecatheon Meadia*, and some others, have been, and still are, most useful plants in a cold greenhouse. The former, after they have gone out of bloom, should be divided if necessary, and planted out in good soil, to grow into size for service next year. The villa gardener should depend on imported roots of the *Hoteia* for blooming in spring, as those kept over till another season are late in flowering.

Cold Frames.—*Auriculas*, both Show and Alpine, will now be in flower, though the former are having a sorry time of it, without some warmth and protection. *Pansies* are getting nicely into flower, and require to be kept clear from green-fly, the surface-soil occasionally stirred, and the plants watered as required. *Primula intermedia* and *P. japonica* are taking the place of *P. nivalis*, which is going out of bloom; the pretty new *Primula rosea* is also very charming. The villa gardener should grow a few *Phloxes* in pots of what is known as the smooth-leaved or suffruticosa section, as they do not do well planted out, and they are very ornamental; a white variety named *Miss Robertson* makes a very pretty pot-plant. Another pleasing subject is *Triteleia*

lilacina, also the pretty *Dianthus alpinus*; while *Pinks* and *Antirrhinums* of the dwarf or Tom-Thumb section are pleasing subjects for pot-culture.

Flower Garden.—By this time the spring garden will have reached its best, and the many spring flowers mentioned last month be in flower. A lady, writing from the north of England a few days since, stated that nearly all her bedding-plants had been destroyed, with the exception of *Polyanthuses* and *Primroses*. These two last-named are now very pretty, blooming later than usual, and on the whole, very freely. Some of the common *Anemones*, both double and single, are valuable early and pretty flowering plants, but in many gardens where the mixed border is maintained, there was but very little in bloom by the middle of April; the cold nights and dull sunless days acting to retard the progress of flowers. The losses sustained among bedding plants must make the villa gardener active in providing for his summer beds, and he should now be potting off seedling plants of *Lobelia*, *Pyrethrum Golden Feather*, *Petunias*, *Stocks*, *Asters*, *Helichrysum*, *Zinnias*, *Dwarf Marigolds*, &c., to get them as strong as possible. Beds of *Phlox Drummondii*, *Dwarf Nasturtiums*, *Petunias*, *Centaurea ragusina*, *Verbena venosa* (raised from seed), with the other things before mentioned, will come in well to fill up beds that are short of their usual occupants. Seeds of hardy and half-hardy perennials should now be sown, in order to get strong plants to put out by the time the autumn is once more on us. Of these we may mention *Delphinium*, *Aconitum Napellus*, *Oenothera macrocarpa*, *Lythrum roseum superbum*, *Pentstemon*, *Sweet William*, *Dwarf Scabious*, *Salvia patens*, and others of which these are good representatives. Growing plants of *Clematis* and other creepers need to have their shoots tied out, to cover the material against which they are growing. The grass plot should be kept nicely rolled, swept, and mown.

Kitchen Garden.—Those who hold the opinion that a spell of hard frost serves to kill slugs, &c., will have had their belief somewhat rudely shaken, for they appear to be more numerous than ever. Lime and soot must be dusted over the growing crops, to keep the slugs at bay. Weeds must be destroyed, using the hoe freely, loosening the soil, and making it beneficial to the plants. The planting-out of *Brussels Sprouts*, *Broccoli* of sorts, *Winter Greens*, &c., are often planted out too late, and the villa gardener should prepare ground for the purpose. As soon as the weather is warm enough, some *Tomatos* can be planted out against a south wall. Other necessary work will embrace the preparation of trenches for *Celery*; planting beds of *Herbs*, sowing suc-

cessive crops of *Lettuce*, *Cauliflower*, *Turnip*, *Radish*, and *Spinach*. Early *Potatos* need hoeing between and earthing-up, while many other details of necessary duties will present themselves to the cultivator.

Fruit Garden.—The necessary work here includes the most important one of covering *Peach* and *Nectarine* trees on walls, to protect them from frost. On the whole, there is good promise of an abundant fruit-crop, but much depends on the weather, and the outlook is not cheering. On *Apricot* trees the caterpillars become troublesome, and in a short time they do much harm to the foliage. Some thinning of the leading shoots coming out from the trees in a forward direction will be necessary. Towards the end of the month the blister may appear on the *Peach* and *Nectarine* trees, and the eured and blistered leaves should be picked off, and the trees washed with a syringe or garden engine, selecting a warm mild morning for the operation; when more advanced, they may be syringed later in the afternoon—as soon as the sun is gone from them. The shoots of *Raspberries* should be thinned out to five or six of the strongest.—SUBURBANUS.

GARDEN GOSSIP.



THE SPRING MEETINGS of the ROYAL HORTICULTURAL and ROYAL BOTANIC SOCIETIES have, so far, been of a very

interesting character. They have been well supplied by subjects of a high order of merit, amongst which the collections of Orchids, Cyclamens, Chinese Primulas, Hyacinths, Roses, Amaryllids, and Cinerarias may be specially mentioned. New Plants of merit have been also numerous, and those here named, with many others, received Certificates. *Staphylea colchica*, a hardy shrub, with white flowers, from Messrs. Veitch, proved to be a very useful forcing plant; *Amaryllis Dr. Masters*, a deep blood-red flower of good form, from Mr. B. S. Williams; *Cyclamen persicum Reading Gem*, remarkable for its broad, rounded petals, from Mr. B. S. Williams; *Amaryllis Virgil*, a very large expanded flower, with crimson centre and cream-coloured towards the edge, from Messrs. Veitch; *Davallia decora* (shown as *D. Mariesii*), a pretty little Japanese fern, resembling *D. bullata*, but evergreen and hardy, from Messrs. Veitch; *Cymbidium Lowianum*, a striking epiphyte, with long drooping spikes of large greenish-yellow flowers, set off by a white base and crimson tip to the recurved lip, from Messrs. Low; *Azalea Empress of India*, from M. Aug. Van Geert, a fine large semi-double flower, pink with white margin, the upper segment thickly spotted with crimson; *Cyclamen persicum Crimson King*, a fine lustrous dark red, from H. Little, Esq.; *Camellia Mrs. C. M. Hovey*, a peach-coloured variety of great substance and smoothness, from Mr. Hovey, of Boston, U.S.A.; *Amaryllis Mrs. Baker*, a splendid crimson flower of large size and expanded form, from Messrs. Veitch; *Amaryllis Thomas Speed*, a vermilion scarlet, with white ray and six-flowered scape, from Mr. Speed, of Chatsworth; *Dendrobium Brymerianum*, a large, yellow-flowered Orchid, remarkable for the deep, shaggy fringe of its lip, from Messrs. Veitch; *Hibiscus schizopetalus*, a

variety of the *rosa-sinensis* group, with the petals of the single orange-scarlet flowers, cut up into narrow segments—very curious, from Messrs. Veitch; *Amaryllis Duchess of Connaught* and *A. Queen Victoria*, the former shown by Messrs. Veitch, the latter by Mr. Williams, two of the best pure white varieties we have yet obtained; *Amaryllis Duke of Connaught*, a smooth dark-crimson, with white star, from Messrs. Veitch.

— At the Spring show of the Newcastle-upon-Tyne Horticultural Society, on April 9th and 10th, there was a fair display of **AURICULAS** and **POLYANTHUSES**. The principal exhibitors of Auriculas were Mr. E. Adams, of Smallwell, and Mr. Thos. E. Hay, Killingworth, and considering the very early date at which the show was held, their plants were very creditable indeed. Mr. Hay had a superb example of Blackbird (Spalding), Glory (Taylor), and other fine sorts. Mr. Adams gained the 1st prize for any edged Auricula with Col. Champneys (Turner), and also in the class for the best self, with Charles J. Perry (Turner). The best Polyanthus were sent from the gardens of Colonel Cowen, Blaydon Burn (Mr. W. Henderson, gr.); and by Mr. E. Adams. The best varieties shown were George IV. (Buck), William IV. (Sanderson), and a variety named Black and Gold. Spurious border flowers were shown under the names of Alexander (Pearson) and Kingfisher.

— THE Society of Apothecaries again this year offer **PRIZES IN BOTANY** to young women students under 20 years of age. The examination will be in general botany, and will consist of questions, both written and oral, in—1. Structural Botany. 2. Vegetable Physiology. 3. Description of Living Plants. 4. Systematic Botany, so far as those subjects are contained in Sir Joseph Hooker's *Science Primer*, and *Botany*, and in Professor Oliver's *Lessons in Elementary Botany*. The examinations will commence in London on the third Wednesday and conclude on the fourth Monday in June, 1879.

— THE ROYAL NATIONAL TULIP SOCIETY has resolved to abandon the method of Judging which has been adopted during the last few years, and elect Judges who are not exhibitors, as was done formerly; and also in future to fix the day of exhibition on the first Saturday in May. The Making-up Meeting will in consequence be held on May 3rd, at the Bull's Head Inn, off Market Place, Manchester, at 3 o'clock in the afternoon. The object will be to fix the day of exhibition, to appoint judges, to revise the Schedule if necessary, and to transact any other business that may be brought forward, and the Committee hope that as many members will attend as can possibly do so. The Schedule of prizes will be issued a few days after this meeting has taken place. Members who cannot attend are invited to write to the Hon. Secretary, stating the day they would prefer for holding the Exhibition, and the Committee hope that every Member will do his utmost to increase the number of subscribers and exhibitors. The Hon. Secretary, Mr. S. Barlow, Stakehill House, Chadderton, near Manchester, will give all necessary information.

— SOME of the new double-flowered **INDIAN AZALEAS** deserves especial notice. One, called **EMPRESS OF INDIA** (or *Impératrice des Indes*), which was awarded a First-class Certificate by the

Floral Committee of the Royal Horticultural Society on March 11th, ranks amongst the finest of recent acquisitions. In its compact-growing habit and dark green foliage, it is all that can be desired, while its flowers are remarkable alike for size, substance, and symmetry; they are fully four inches in diameter, perfect in form, the outer segments of the corolla well expanded, and slightly undulated, though smooth on the edge, and thus fully displaying the tuft of numerous smaller petaloid segments which fill up the centre. The colour is a pleasing tint of rosy-salmon, feathering out towards the distinct but narrow white band which borders each lobe; while the central petals are of the same hue, and are also edged with white, the upper petal being, in addition, blotched with a dense mass of deep crimson dots. This variety, which will shortly be sent out by M. Auguste Van Geert, of Ghent, took the first prize at the Ghent Show in April, 1878, under the provisional name of *Héros des Flandres*. Being a free bloomer, it will be valuable both for decorative and exhibition purposes. M. Van Geert will send out at the same time another variety, of the first order of merit, named **LOUISA PYNART**, one of the largest and best-shaped double whites yet raised, the flowers measuring quite five inches across, and being of a stout and enduring texture, such as will make it most effective and invaluable, either for exhibition or other purposes. This latter novelty was raised by the late M. L. Brugge, one of the most successful of the Ghent cultivators.

— THE vacancy in the **EDINBURGH PROFESSORSHIP OF BOTANY**, caused by the resignation of Professor Balfour, has been filled by the selection of Dr. Dickson, Professor of Botany in the Glasgow University, and previously in the University of Dublin. No better selection could have been made by the heads of the Edinburgh University. Apart from his scientific attainments, Dr. Dickson possesses every other qualification calculated to make him popular with his class, and among the cultivated circles of the modern Athens. The appointment, of course, causes a vacancy in that of Glasgow.

— THE **TROPEOLUM SPECIOSUM**, as we learn from Mr. Halliday, of Scone Palace, appears to be spreading in the West Highlands like the Mistletoe in Herefordshire, and apparently by the same means, viz., the sparrows and other small birds. It is growing up at Scone, where the hand of man has neither sown nor planted it, and as time goes on it will doubtless distribute itself more and more.

Obituary.

— PROFESSOR REICHENBACH, of Dresden, died on March 17th, in his 87th year. He was the father of the eminent Orchidologist, and is best known in this country for his numerous illustrated publications on the Flora of Central Europe, in the elaboration of which he was much aided by his son.


— MR. JAMES STEVENSON, Gardener to C. Coombe, Esq., at Cobham Hall, Surrey, died on March 30th, in his 60th year. He entered the service of the late proprietor of Cobham Hall about thirty years ago, his duties commencing with the formation of an entirely new garden, which he has had charge of ever since.



Rosa (Rose)

ROSE (H.P.) HARRISON WEIR.


[PLATE 491.]

 HIS fine new Rose was raised at the Royal Nursery, Slough, by Mr. Charles Turner, to whom we owe the opportunity of figuring it. The variety is one of the very highest order of merit, and in his portrait of its lineaments, Mr. Fitch has very faithfully brought out its leading characteristics, which may be summed up in the words—depth of form, and intensity of colour. It is of a remarkably vigorous constitution, with bold and effective foliage, and the flowers are very large, deep and full, symmetrically cupped, and very fragrant. The petals are broad, smooth, and stout, and of a rich velvety crimson, enlivened with scarlet, very bright and dazzling on the face of the petals, which have a slight purplish-rose tinge on the reverse. Mr. Turner, who describes it as a good autumnal bloomer, in-

forms us that it is a seedling between Charles Lefebvre and Xavier Olibo, resembling the former in its form and habit, and the latter in its colour. It is, no doubt, a grand addition to our English seedling Roses, and one which may be expected to hold its place in our Rose-gardens for years to come. That a Rose which has flowers of the brightest tint of crimson-scarlet, and of great depth and fullness, and possesses a fine robust constitution, should gain public recognition, is not to be wondered at, and therefore we are not surprised to hear that last season it won First-class Certificates from the Royal Botanic Society on July 10th, the Royal Horticultural Society on July 23rd, and the Oxford Horticultural Society on July 31st. It is to be sent out in June of the present year.—T. MOORE.

MARKET PLANTS.—XII.

LILY OF THE VALLEY.

 HE sweet Lily of the Valley—*Convallaria majalis*—is always a great favourite in spring, and it can be had for a lengthened period, beginning with flowers forced into heat in January and February, and going on to April, when flowers are gathered from those plants that have been grown in protected pits, and finally from plants in open beds. Lilies of the Valley are received from France, Holland, and Germany, in the form of clumps and as single crowns. A few of these are potted and placed in a brisk bottom-heat as soon as necessary, or they are planted out in cocoa-nut refuse in a forcing-pit, in both cases the temperature being high and very moist. The late Mr. Standish, of Ascot, who used to grow Lilies of the Valley very largely to cut from, made use of crowns, in preference to clumps. They were first of all planted out-of-doors in a bed of soil, put on the top of a bed of leaves and dung, and covered with mats, or some such material, to protect them from rain and frost. As these showed signs of growth, they were taken into one of the forcing houses, and planted in leaves and dung, both warm and moist, and finally put into pits and plunged in a hot-bed to get them into bloom. There are several ways of forcing the Lily of the Valley into bloom, but that followed by Mr. Standish will give a good general idea of a very suitable method. It is worthy of note that Lilies of


the Valley do not put forth any roots during the time of forcing; and they are thrown away afterwards, as they are not considered to be worth keeping, being obtained from abroad annually, at a moderate cost.

Turning now to Lilies of the Valley grown in the open ground, I may instance Messrs. Hawkins and Bennett, of the Lily Nursery, Twickenham, as perhaps the largest growers of Lilies of the Valley in this way. Their nursery contains a large number of beds, some newly planted, and some that have been established for a few years; by this means the annual supply is always maintained. A bed of Lilies will last about six years; and it is not till the third year that a good crop of flowers is gathered. When a new bed is made, the spot of ground selected for the purpose is trenched to the depth of two feet, but enough of the soil is taken out to bring what remains some four inches below the level of the usual surface. On this is placed a layer of a well-prepared compost, made up of leaf-mould, rotten cow-dung, and well-decomposed stable-dung, well mixed together; on this the Lily roots are placed, covered with two inches of soil, and surfaced over with a good dressing of fresher manure, two to three inches in depth. The first year some growth is made. The second year a few flowers are produced. The third year a good crop is obtained. As soon as the leaves die away in the summer, the bed

is raked clear of stones, &c., and just before Christmas a good dressing, two inches in depth, is given of the mixture of cow-dung, stable-dung, and leaf-mould mentioned above. In the spring, before the Lilies begin to grow, the beds are cleaned over, and made nice and neat.

The first picking of Lilies takes place in April, earlier or later, according to the season; but to protect the earliest beds from harm from frost, some rough boards are put along behind and in front, as in the case of a frame, with cross-pieces, on which mats and any such covering can be laid. A certain space of a bed is covered at one time, and this covering is continued as long as needed. During the time the flowers are being gathered, something like 100 to 120 dozen bunches of flowers, each containing twelve or thirteen spikes, are sent to market every day, in addition to what are sold locally. The variety grown is that known as the Victoria, or Major Lily of the Valley, which bears large bold spikes of really superb flowers, each stem or spike bearing many blossoms.—R. DEAN.

GOLD-FISH.


E see in the windows of shops in towns where water-filters are sold, samples of water that may have been got from some ditch or standing pool, slightly green, and not without motes which one would not like to see in connection with drinking-water; and by the side of this a sample of the same water after passing through the filter. In some other windows we see the aquarium or tank of glass, with gold-fish and other creatures that inhabit the water. In these there is sometimes to be seen a very quiet creature, a snail, that, were it not for his house which he carries on his back, we should think lifeless; indeed, his very motion has passed into an idiom in our language, "crawling like a snail," but these snails are all the while busy cleaning the glass so as to show the collection inside, and whilst their disc holds them tight on, their mouths are busy with the very small fry that adhere to the glass.

The elegant movements of the gold-fish in a globular glass, greatly magnified, are well known; but it is not so well known as it ought to be, that such little pets are often starved, on the score of cold and hunger, for want of some kind friend to put in a good word for them. In my case, we had to buy in a stock of gold-fish occasionally, as they were wanted to tenant a marble centre-piece in the garden. What

with the changes of our variable climate and neglect, our stock of gold-fish always kept lessening, no provision having been made for their comfort in the only way they could be benefited, namely, by food and warmth, and the presence of some aquatic plants to hide under.

At Matlock there is a hot spring, where the water issues smoking into a pool in the garden; at all events, it was so at the old Bath, when I was there, and we got fish of the size we wanted, as the place was swarming with them, of all ages. Again, at a silk mill in the town of Leek, there were two tanks in front of the mill, one with very hot water, and the other with water about blood-heat, and this contained gold-fish in abundance; and the older ones seemed always to prefer the warm spot where the water entered. There are, no doubt, many tanks doing such duty now, but I would caution any one who may wish to build a tank for gold-fish, to make it not less than a yard in depth, as the fish go down with cold, and come up into the hot sunshine; and unless there be glass overhead, some system of heating should be got up. When the work is done, and the tank tenanted with the fish, you will see them playful as kittens, trying to catch bread-crumbs or anything else savoury, for they belong to a ravenous race. This only shows that what they so greedily run, or rather, swim after, is quite in their line. These two important items—viz., food and warmth, and I may add, shelter—are essential to their welfare. An extra supply of animalculæ is got, when plenty of water is put within their reach. Spring water, generally speaking, is not good for gold-fish, but that which has stood in pits or ponds exposed to the air, and usually river water is good, when not in flood. All mineral waters, as lime, iron, lead, are bad to keep gold-fish in. In adding fresh water, it is easy enough, in glass tanks or globes, to introduce tepid water, by way of a treat to the inmates in their prison.—ALEX. FORSYTH.

ROSA POLYANTHA AS A STOCK.

HE attention of Rosarians is called to a new stock for Roses, one which is remarkable for its freedom of growth and its facility of reproduction. This stock is the *Rosa polyantha*; Siebold and Zuccarini, a shrub of recent introduction from Japan, which bears single white odoriferous flowers, thirty or forty in a panicle, succeeded by obovate fruits of the size of a cherry-stone. M. Carrière



ROSA POLYANTHA.

had already recorded of this Rose (*Rev. Hort.*, 1876, 253) that it makes sterile shoots of 6 ft. or upwards in length. Some seeds received from Japan in 1873, at the Botanic Garden of Bordeaux, produced young plants of fine growth, in which, after the second year, an exceptional vigour was noticed, and since then multiplied trials have proved that this Rose may be advantageously substituted for the briar as a stock. To provide these, strong bushes of the *Rosa polyantha* should, in November, be carefully taken up, and the stems separated, so as to preserve to each a piece of the heel, provided or not with roots. The larger stems should be planted at proper distances apart, and budded in July or August, to make tall-stemmed roses. The more slender or shorter stems, being more or less cut back, will make half-standards or dwarf trees.

The branches and pieces of stem up to the smallest sprigs should be put aside to make cuttings, which will take root as readily as the couch-grass, and will supply during the next and following years a multitude of vigorous stocks, which may be annually replaced by new plantations of cuttings. The larger roots obtained in the process of dividing the stump can also be grafted and potted, and then placed on a hot-bed, where the grafts will not delay to push vigorously. These grafts on pieces of roots take at the rate of 80 per cent.

The common briar (*Rosa canina*, L.) is but sparingly reproduced from cuttings, and is hopelessly slow to raise from seed. I cannot therefore too strongly advise horticulturists and amateurs to adopt the *Rosa polyantha*, of which a cutting of medium strength will give, after the first year, a stock fit to work as a dwarf, and in the second year one for a half or full standard.—A. CAILLE, *Botanic Garden, Bordeaux*, in *Journal des Roses*.

NATIONAL AURICULA SHOW. NORTHERN SECTION.

CONCURRENTLY with the second Spring Show of the Manchester Royal Botanical and Horticultural Society, which took place on April 29th, the Northern Section of the National Auricula Society held its annual exhibition. The day was propitious, and the show of full average importance, all the classes being well contested. With his characteristic good-feeling towards his brother-cultivators, the Rev. F. D. Horner, who had taken all the amateurs' first prizes at South Kensington, did not compete at Manchester, but his finely-grown plants graced the meeting of the Society, of which he is Secretary. There was no large class of fifty plants, as at the Southern Show. The following is a list of the awards made on this occasion:—

Class A. 6 AURICULAS, dissimilar.—1st prize to Mr. B. Simonite, Rough Bank, Sheffield, for Lancashire Hero and Talisman, green-edges; George Lightbody and John Waterston, grey-edges; Frank Simonite, white-edge; and Blackbird, self—a very fine lot, of which Talisman was a little cupped, but powerful in its clear white paste; Frank Simonite, very bright and pleasing—a king among white-edges; George Lightbody and Lancashire Hero being also in grand form. 2nd, to Mr. Thos. Woodhead, Halifax, for Imperator, green-edge; George Lightbody, grey-edge; Ne Plus Ultra, white-edge; and Metropolitan, Blackbird, Garibaldi, self—the presence of three selfs was a weak point, but there was good quality, Blackbird, Metropolitan, and George Lightbody being very fine. 3rd, to Mr. H. Wilson, Halifax, for Prince of Greens and Page's Champion, green-edges; George Lightbody and Lancashire Hero, greys; Ashworth's Regular, white-edge; and C. J. Perry, self—the two green-edges in this group were shown in fine condition. 4th, Mr. Jonathan Booth, Failsforth, Manchester, for Prince of Greens, green-edge; George Lightbody and Dr. Horner, green-edges; a seedling white-edge, having a finely formed pip, but wanting in body-colour [Acme]; and Meteor Flag and Ruby, selfs. 5th, to Mr. T. Mellor, Ashton-under-Lyne. 6th, to Mr. S. Barlow, Chadderton.

Class B. 4 AURICULAS, dissimilar.—1st prize to Mr. T. Mellor, Ashton-under-Lyne, for Trail's Anna, green-edge; Kenyon's Ringleader, grey-edge; Smiling Beauty, white-edge; and Othello, self—Smiling Beauty and Ringleader being in rare form; 2nd, to Mr. B. Simonite, Sheffield, for Richard Gorton, green-edge, a lively looking flower in the way of Prince of Greens, but not in such good form as it has been previously seen; George Lightbody, grey-edge; Frank Simonite, white-edge; and a seedling red self, apparently obtained from Lord of Lorne, rather deeper in colour, and with firmly formed flat pips. 3rd, to Mr. T. Woodhead, Halifax, for Col. Taylor, green-edge, General Bolivar, grey-edge, very fine; Ne Plus Ultra, white-edge, and Blackbird, self, very fine; 4th, to Mr. E. Pohlman, Halifax, for Richard Headley, green-edge, very fine edge and good tube, well shaped and finely coloured, the body-colour weak, and the paste a little scalloped, yet generally in good form; Kent's Queen Victoria, grey-edge, Chapman's Maria, white-edge, and Garibaldi (Pohlman's), self, very fine in all its parts, excepting the paste, which was a little narrow; 5th, to Mr. J. P. Sharp; 6th, to Mr. W. Brocksbank.

Class C. 2 AURICULAS.—Here the two varieties have to be dissimilar both in variety and class. 1st prize to Mr. J. Booth, for George Lightbody, grey-edge, and Blackbird, self, in rare form; 2nd, to Mr. B. Simonite, for George Lightbody, grey-edge, and Frank Simonite, white-edge; 3rd, to Mr. Thomas Mellor, for General Bolivar, grey-edge, and C. J. Perry, self; 4th, to Mr. H. Wilson, for Prince of Greens, green-edge, and Ashworth's Regular, white-edge; 5th, to Miss Steward, York; 6th, to Mr. W. Brocksbank, Didsbury.

Class D. 2 AURICULAS (maiden growers).—1st prize to Mr. J. Beswick, Sale, for Richard Headley, grey-edge, in fine form; and a seedling self in the way of Pizarro, of good colour and proportions, and full of promise; 2nd, to Mr. W. Brocksbank, for General Bolivar, grey-edge, and Lord Palmerston, green-edge; 3rd, to Mr. W. Shaw, Bury, for George Lightbody, grey-edge, and Taylor's Glory, white-edge; 4th, to Mr. William Bolton, Warrington, for George Lightbody, grey-edge, and Bessy Bell, self, a very bright-looking dark flower of good form and substance, the paste a little wanting in rotundity.

Class E. 1 GREEN-EDGED AURICULA.—The premier green-edge was Prince of Greens, from Mr.

B. Simonite; 1st, Stretch's Alexander, from Mr. T. Woodhead; 2nd, Lancashire Hero, from Mr. R. Gorton; 3rd, Lovely Ann, from Mr. T. Mellor; 4th, Trail's Anna, from Mr. S. Barlow; 5th, Colonel Taylor, from Mr. B. Simonite; 6th, a variety unrecorded.

Class F. 1 GREY-EDGED AURICULA.—The premier grey-edge was a splendid Lancashire Hero, from Mr. B. Simonite; 1st, Ne Plus Ultra, from Mr. Jno. Spittle; 2nd, Ajax, a bold-looking variety of good proportions, from Mr. B. Simonite; 3rd, George Lightbody, from Mr. Cator; 4th, Richard Headley, from the same; 5th, General Bolivar, from Mr. T. Mellor.

Class G. 1 WHITE-EDGED AURICULA.—The premier flower in the white-edged class was Frank Simonite, from Mr. B. Simonite, very fine, the truss having eight pips, all of excellent quality, and particularly well finished on the edge; 1st, the seedling already noticed [Acme], from Mr. J. Booth; 2nd, John Waterston, from Mr. T. Mellor; 3rd, True Briton, from Mr. R. Gorton; 4th, Smiling Beauty, from Mr. J. Booth; 5th, Catharina, from Mr. J. Bolton; 6th, Taylor's Glory, from Mr. B. Simonite; 7th, a Seedling in the way of Glory, from Mr. J. Beswick.

Class H. 1 SELF AURICULA.—The premier self was a very fine well-formed Seedling, in the way of Mrs. Sturrock, but of a deeper and brighter colour, and well finished; 1st, a fine, smooth, dark Seedling from Mr. J. Beswick; 2nd, Ellen Lancaster, from Mr. T. Mellor, very fine in the paste; 3rd, C. J. Perry, from Mr. H. Wilson; 4th, Royal Purple, from Miss Steward; 5th, Pizarro, from an unknown exhibitor; 6th, Nonsuch, a dark self, from Miss Steward; 7th, Lord of Lorne, from Mr. S. Barlow.

The Rev. F. Tymons, of Dublin, who acted as one of the judges, brought over with him one of the finest examples of Richard Headley perhaps ever seen, and an equally fine example of George Lightbody. These two fine grey-edges were intended for the single grey-edged class, but they were unfortunately overlooked by the judges. The George Lightbody was selected by general consent as being the premier flower in the whole exhibition, and was surpassingly fine both in truss and pip.

Class I. 4 ALPINE AURICULAS, dissimilar.—This class was not so well represented as usual, but as all flowers staged must be shaded varieties they could not be so numerous as in the South. 1st prize to Mr. J. Booth, for Elcho, Diadem, Tenniel, and George Lightbody; 2nd to Mr. S. Barlow, for Dazzle, Ovid, Elcho, and Beatrice; 3rd to Mr. W. Brocksbank, for Brilliant, Orion, Dazzle, and Diadem; 4th to Mr. R. Gorton for Jessie, Diadem, Elcho, and Stirling Castle, very bright indeed.

Class K. 1 ALPINE AURICULA, yellow centre.—1st prize to Mr. J. Beswick, for Diadem (Gorton); 2nd, Mr. J. Booth, for the same variety—indeed, Mr. Gorton's beautiful flower would have won all along the line, did not the Society's rules restrict a variety from winning more than twice in the class. Some unnamed flowers and Ovid were also awarded prizes.

Class L. 1 ALPINE AURICULA, white centre.—1st prize to Mr. J. Booth for Elcho; 2nd, to Miss Steward for Elcho; Conspicua and Tenniel were also well shown.

Class O. 12 FANCY AURICULAS.—This class brought some curious and by no means unattractive-looking flowers, the best strain coming from Mr. S. Barlow; 2nd, Mr. W. Brownhill; 3rd, Mr. W. Bolton.

Class M. 3 POLYANTHUSES (dissimilar).—The classes for gold-laced Polyanthus were better filled than in London, and brought flowers of much greater refinement, indeed high-class quality is indispensable in the North, where the finest devel-

oped red-ground Polyanthus is taken down by a black-ground, so much importance being attached to the striking contrast between black and gold. 1st prize to Mr. J. Beswick, Sale, for Exile, Cheshire Favourite, and Lord Lincoln; 2nd, to Mr. Brocksbank, for Hilton's President, in better form than we have ever seen it before, Cheshire Favourite, and Exile; 3rd, to Mr. Brownhill, Sale, for Exile, Cheshire Favourite, and President; 4th, to Mr. S. Barlow, for the same varieties.

Class N. 1 POLYANTHUS.—The premier flower was Exile, from Mr. Brownhill; 1st, Lord Lincoln, from Mr. Beswick; 2nd, Cheshire Favourite, from Mr. Brownhill; 3rd, Exile, from Mr. John Beswick; 4th, President, from Mr. Brownhill; 5th, William IV., from Mr. S. Barlow.

Class P. 12 FANCY POLYANTHUS, dissimilar.—1st prize to Mr. S. Barlow. 2nd, Mr. Brocksbank.

Class Q. 12 PRIMROSES, double and single.—1st prize to Mr. S. Barlow, whose group contained some striking single varieties. 2nd, Mr. Brocksbank, who had a good single white.

Extra Class. BEST SEEDLING POLYANTHUS.—1st prizes to Mr. W. Bolton, Warrington, for a variety raised from Mr. D. Jackson's seedling from Lord Lincoln, and having the same clear, bright colour. 2nd, Mr. S. Barlow, for a well-laced flower somewhat clouded in the centre. 3rd, Mr. J. Goodier, Stakehill. No names are reported for these seedlings, as there should be for future identification.—In addition to these, a First-class Certificate was awarded to gold-laced seedling Polyanthus, *John of Gaunt*, from Mr. Brocksbank; and a similar award was made to *Primula vulgaris platypetala plena* (the variety known on the Continent as Alfred de Moulins), from Messrs. Paul and Son, of Cheshunt.

One of the most striking features of the show was a group of Hardy Plants from Mr. S. Barlow, to which a gold medal was assigned, the first time, we believe, that the Botanical Society's gold medal has gone to a collection of this character; and that it should have done so is a very hopeful sign, since Stakehill, near Middleton, is one of the last places in the world where, at first sight, it would be thought that a gold medal could be earned; though in bygone times many as great an honour was no doubt well deserved, Middleton having been one of the principal seats of the early local floriculture. Mr. Barlow's plants consisted of sweet-scented early-blooming *Rhododendrons*, chiefly white ones, which predominated in the centre, with at the southern wing a most beautiful array of Hyacinths and other bulbous flowers; and at the other extremity a bank of the *Primula cortusoides*, the effect of a large mass of which, in its lively purple, is inexpressible. The wealth of this wonderful collection lay, however, in its innumerable unpretentious but surpassingly pretty outdoor or open-garden herbaceous miscellanea—*Primulas*, of which there were no fewer than twenty-two distinct species or well-marked varieties, taking the lead; and well supplemented with hardy orchids and similar plants, which seemed like the lace and golden border of a queen's robe, none excelling, in its pure white petals and bright green bosom of leaves, the *Trillium grandiflorum*. The primulaceous plants brought from Stakehill

alone amounted to over 200. Amongst the groups from Amateurs, Mr. William Brocksbank, of Didsbury, had a beautiful little lot, in which was the new *Primula rosea* from Cashmere. It must be thought of, by those who did not see it, as a lovely little auricula sort of thing, with flowers of a delicate rose-colour; perfectly hardy, and able to bloom profusely. In the same basket were blooms of the *Narcissus Horsfieldii*, now very rare and valuable, and peculiarly interesting, from having been raised, as a hybrid, fifty or sixty years ago by the celebrated old Lancashire botanist in humble life, John Horsfield, of Besses-o'-th'-Barn.—D. M.

APHIDES, OR PLANT-LICE.

IN the *Bulletin of the United States Geological Survey*, Dr. Riley, the eminent State Entomologist, has published a series of interesting observations on the life-history of some of the Aphides, which have a special value to horticulturists, inasmuch as they are almost daily called upon to do battle with one form or another of these minute, but destructive creatures. The insects themselves are so fragile, and are so much affected by confinement, that it is a task requiring both diligence and perseverance to watch their daily life over a period of ten months; but with the help of an enthusiastic lady friend, this was done, and we have gained thereby the following particulars concerning the Aphis of the American elm:—

The name of this insect is *Schizoneura americana*. It infests the American elm, and sometimes in such numbers as to cause all the leaves to fall. If, during the winter, the cracks in the bark of an American elm that had been badly infested with this leaf-curling species during the previous summer, be examined, there will generally be found here and there a small, dull, yellow-coloured egg, about .5mm. long, probably still covered with the remains of the female's body, quite dried up. From this egg in the early spring will be hatched the little crawling creature which constitutes the first generation in a very remarkable series. This "stem-mother," settling upon the tender opening leaf, will begin to feed, causing the leaf to swell up and pucker until at last it curls over the tiny form. After three moults, the temperature being warm, it commences to people the leaf with young at the rate of about one every six or seven hours. The second generation, though they never grow

to be at all as large as the stem-mother, resemble her in many respects; they accumulate in vast numbers, and some of them, scattering, form new colonies. Their issue forms the third generation, which are destined to become winged; these winged forms are short-lived, but they lay twelve or fourteen pseudova at average intervals of about half-an-hour. The young plant-lice from these form the fourth generation, the members of which are very active, running swiftly; they are of a brown colour, and are somewhat like in general appearance to those of the second generation. In this stage they swarm over every portion of the tree, and their necessities cause them to migrate, in which effort masses of them get destroyed. The fifth generation is very similar to the fourth; it gives rise to forms like the fourth, but without wings; these, which form the sixth generation, all acquire wings, and abound in the latter end of June and early part of July, congregating on the bark, and seeking out sheltered cracks or crevices, in which to deposit their young. These form the seventh generation, and are sluggish, of the colour of the bark, the females a little larger than the males; they have no mouth, but live for several days without motion. The female seems to increase in size by the enlargement of her one single egg, but both sexes soon perish, leaving among their shrivelled bodies a shining, brownish, winter egg, like that with which the cycle started. Therefore, it seems that after a long series of vegetative reproductions, the time comes for the renewing of the race by this zygospore-like body. It is suggested that in this fact lies a hint to our plant-growers, since it must be a much easier matter to destroy a single egg than to stop a stream of agamic-produced forms extending to six generations.—M.

HOW TO GROW CINERARIAS.

FEW of our popular flowers are more useful than these for greenhouse and conservatory decoration, during the winter and early spring months; and amongst the strains known to English cultivators, few equal, and none excel, that grown and exhibited by Mr. James, of the Redlees Gardens, Isleworth, who may be considered as our champion Cineraria-grower. We take the opportunity afforded by the publication in the *Gardeners' Chronicle* (N.S., xi., 532) of Mr. James's system of cultivation, to enrich our pages with some of the notes gleaned from his practice.

A fine coloured group of some of Mr. James's varieties is given by our contemporary. The annexed woodcut represents Mr. Cannell's strain.

First, as to Soil. Mr. James grows his plants in a compost of six parts of good turfy loam to one part of rotten cow-manure, adding a little sand if necessary, but omitting leaf-mould, which many persons deem essential. The plants are grown and flowered in low span-roofed pits. The named varieties are propagated by taking off shoots from the roots in July and August. These are potted singly, in small pots in light sandy soil; and, after potting, are set into a frame, facing north, or placed behind a north wall. The old plants should be retained until a sufficient number of young ones are rooted. Some will form roots, and grow away very rapidly; these must be removed, and placed in another frame where more air can be admitted; and as the others start into growth, they can be removed to the same frame. When the plants have well filled the little pots with roots, they should be repotted into 4-in. pots, or a size smaller, according to the strength of the plants. They will do well in ordinary frames with the back to the south; or the frame may be raised from the ground by placing a brick or two under each corner, which allows a free circulation of air night and day. The lights should also be tilted. A temporary stage of trellis-work should be made, so as to bring up the plants near to the glass. They should be freely watered, for if allowed to flag, both green-fly and thrips will speedily appear. A low pit in which to grow the plants will answer quite as well as the frames.

After they are established, growth is very rapid, and they will soon require to be shifted into larger pots—6-in. or 7-in. The potting material should consist of turfy loam about four parts, one part leaf-mould, and one part rotten cow-manure, with sand added if necessary. Those plants intended to flower early will not be again potted, but if specimens of large size are wanted in April, they must be repotted into 8-in. or 9-in. pots. The centre stem of the late-flowering plants should be stopped early; the others should not be stopped at all. As soon as there is any danger of frost, remove the plants to a heated house, and experience suggests a span-roofed greenhouse,



SPECIMEN CINERARIA.

running north and south. Careful watering is now necessary; the plants must be kept moist at the roots, but the foliage should not be wetted, nor the water splashed over the pots. The plants that are not stopped require no tying or training; but specimen plants must be trained by fastening a wire round the pot under the rim, and gently drawing the shoots down to this with a strip of matting.

When the roots have nearly filled the pots in which they are intended to flower (and an 8-in. or 9-in. pot is sufficient for the largest specimen), they should receive manure-water twice a week—sheep-manure answering well for this purpose. Put half-a-bushel into a barrel with 15 gallons of water, stir the mass well up, and let it settle for about 24 hours, and before applying it reduce its strength by adding an equal quantity of rain-water. Cow-manure also makes an excellent liquid to water with; it is not so strong as sheep-manure, and a larger proportion of it may be used to the same quantity of water. Guano-water, and

that formed by the soaking of horse-droppings, seem to encourage too much the development of leaves. In using manure-water it is most desirable to err on the side of its being too weak, rather than too strong, for an overdose destroys the young rootlets, and the plants are then past remedy.

After March 1st, it will be necessary to shade if the flowers are open, but to preserve the bloom as long as possible, the shading must not be used thus early except to obstruct the direct rays of the sun. Let the plants have as much light as possible. It is objectionable to paint the glass with any sort of wash, for the reason that the plants are thus shaded at times when it is desirable that they should receive all the light possible.

The most popular method of propagating the Cineraria is by means of seeds. Sow in May or June in light soil. When the small plants are large enough to handle, prick them out about six or nine in a 4-in. pot, and when these have grown so that the leaves touch each

other, repot them separately in small pots, and treat them as previously directed for named sorts. Seedlings generally grow more vigorously than named varieties. They are less difficult to propagate, and for general decorative purposes they answer equally well, but seeds from a good strain should be obtained to start with. The insect pests are principally green-fly and thrips, but red-spider will also attack the leaves. Fumigate with tobacco-smoke to destroy the two first, and the other will seldom appear if proper attention is given to the plants. Keep them close up to the glass during the whole period of their growth; avoid a dry atmosphere, and do not allow them to suffer for want of water at the roots.—M.

AURICULA NOTES.



NE pleasing feature of the National Auricula Society's exhibition on April 22nd, was the very large attendance of visitors thereat. We may, hence, hope that these pleasant meetings will prove stimulants to the culture of the Auricula, and bring forth not only many lookers-on and admirers, but some new growers also.

There are many points of interest which are worthy of record, one of which was the high quality of the old Auriculas. Amongst the green-edged sorts, Leigh's Colonel Taylor was in perfect condition; one in the collection of fifty plants, shown by J. T. D. Llewelyn, Esq., would have been placed first in its class had it been shown there. Booth's Freedom, with its slightly angular paste, has yet a pure green-edge, although no one can grow it but Mr. Horner. Simonite's Richard Gorton is evidently a seedling from Prince of Greens, and must be seen again before judgment can be passed upon it. Trail's Anna is said to be an improved Freedom, but in growth it is distinct, as well as in flower.

Among Grey-edges the constancy and refinement of Headley's George Lightbody is not yet equalled. Kay's Alexander Meiklejohn was very attractive; its broad, silvery-grey edge and black body-colour are its strong points. The new seedling Grey Friar, from J. T. D. Llewelyn, Esq., is quite distinct from any Auricula known to me, and is worthy of a place in the most select collection. Simonite's Samuel Barlow and Simonite's William Brad-

shaw are certainly distinct and good flowers, although they must take a place lower than Lancashire Hero.

Of White-edged varieties, Walker's John Simonite, if not so constant as Smiling Beauty, has certainly a much purer white edge, and will long hold a leading place. Taylor's Glory was shown in good condition; it also has a very pure white edge. Lee's Earl Grosvenor never was shown finer; its edge is of the purest white, and its only fault a slight scattering of meal on the body-colour. Smith's Anne Smith was well shown; this has also a very pure edge, but the flowers are wanting in shape, and the body-colour breaks through to the outer edge of the petal.

Of the Selfs, Topsy, Pizarro, Lord of Lorne, C. J. Perry, Meteor Flag, and Eliza, were the best. Ringdove (Horner) is quite new, and has the roundest paste of any.

In Alpines the improvement is very marked. Mr. Turner, of Slough, exhibited the best collection that has ever been seen; his new shaded-edged flowers, from which Duchess of Connaught and A. F. Barron were selected as the best, are very beautiful; and they are hardy enough to stand in the open garden through our severest winter.—J. DOUGLAS, *Loxford Hall*.

HABROTHAMNUS ELEGANS.



HIS useful and handsome plant will amply repay the cultivator, either planted out as a creeper, or under pot culture, and trained in the form of a bush. It is a greenhouse plant of hardy constitution, and requires very liberal treatment under pot-culture to grow and bloom freely; under such treatment it becomes almost a perpetual bloomer, but being a gross feeder it must not be allowed to suffer from drought, or to be cramped for want of pot-room. Peat and loam in equal portions, broken up, leaving all the turfy portions in, and sharp sand added in sufficient quantity to keep the whole porous, form a compost that suits this plant well. In potting, give ample depth of broken crocks for drainage, over which place some fibry peat to keep the whole in working order. Pot moderately firm, after which give a good soaking of water until it passes through freely. Watering must at all times be strictly attended to. As



Picotées :

J. T. Rusten. erg. del

1. Morna. 2. Rev. J. B. M. Camm. 3. Lady Louisa.

soon as the plant gets into free growth, give liquid manure once a week. When the roots have reached the sides of the pot, shift into one a size larger, using soil as before recommended. If these directions are attended to, the growth will increase in strength, and the stronger the growth the more abundant will be the blossoms. The rich red and varnished appearance of the flowers, and dark green foliage, makes this plant a very suitable one for a creeper on a light background.—HENRY CHILMAN, *Somerley Gardens*.

NEW PICOTEEES.

[PLATE 492.]



OF the subjects of our present illustration this month, Fig. 1 and Fig. 2 are products of the garden of the Rev. C. Fellowes, of Shotesham Rectory, Norfolk; Fig. 3 of that of Dr. Abercrombie, of Cheltenham; both of them raisers long known to fame, and whose contributions have enriched the collections of their fellow florists with many sterling varieties.

Our friend Mr. Dodwell remarks of the two former:—"They are chiefly remarkable for the new and lovely shades of colour they possess—colours which the artist, cunning as is his skill, in vain essays to imitate—colours which not only are admirable in themselves, but which from judicious crosses may be expected to give yet larger results in the direction of variety. LADY LOUISA (Fig. 3) is undoubtedly the brightest rose, and most regularly marked Picotee yet obtained in its class, and though not of the largest size, was deservedly selected for a first-class certificate at the meeting of the National Carnation and Picotee Society in 1877."

GOLD-LACED POLYANTHUSES.

THE increasing demand for the true old named varieties is one indication of an awakened interest in these interesting subjects, which awakened interest is, in a great measure, owing to the institution of the Southern Section of the National Auricula Society.

When a year or so ago I addressed a caution to buyers of named Polyanthuses to be careful what they purchased, it was thought by some that I appeared to be imputing dishonesty to men who were without reproach. I made

no imputations of this kind. I believed named Polyanthuses were palmed off on honourable men, who purchased and sold in perfect good-faith, and I was desirous of placing these, as well as those who purchased to cultivate, on their guard. Last winter I bought two plants of *Buck's George IV.*, and three of *Cox's Prince Regent*. The prices charged were high; but if true, the venture was a wise one, and I ordered the plants named. One plant of *George IV.* has flowered, and is quite true, and I have every reason to think the other is correct. Of the three plants of *Prince Regent*, two have bloomed; they are quite distinct, but neither is worth a place in the border. If *Cox's Prince Regent* in its true old form were in cultivation in the neighbourhood of Manchester, it would, no doubt, have put in an appearance at the recent Auricula Show at Manchester, but there was no sign of it. *Pearson's Alexander* has found its way into the South. Mr. Douglas and I have it from the same source, and though it is a decidedly good thing, we are told it is not true. The same is said of *Beauty of England*, though the source from which I obtained mine is so unexceptionable that I hope it is correct. It has not done well with me, and it did seem to lack something of its character for refinement as it was grown by Mr. Douglas, and shown at the Auricula Show at South Kensington on April 22nd, but this has not been a Polyanthus year generally. With the exception of *Lancer*, which has been very fine, but unusually late, my named kinds did not bloom in good form. I attribute this to their having become so dry at the roots during the long spell of frosty weather in the depth of the winter.

When in Manchester, attending the Northern Auricula Show, I made inquiries about *Kingfisher*. One exhibitor told me he had it, but others said it was not the true sort. As figured in the *Birmingham and Midland Gardeners' Magazine* for July, 1852, it is represented as an exceedingly bright red flower, the colours pure, proportionate, and distinct, with a golden centre and lacing, deeper in colour than what is said to be now grown as *Fingfisher*, and altogether brighter in expression. I have received *Kingfisher* from two persons, but they are not alike in habit of growth; one has bloomed, and I am quite resigned to its being spurious; the

other has not yet flowered. The drawing of Kingfisher referred to does not depict it as so bright in the centre as *Lancer*. I think that all who are growing the old-fashioned gold-laced Polyanthus would do well to look after and preserve all the coloured illustrations that can be met with, as they will be of assistance in testing the identity or otherwise of any that may come under notice.

The Polyanthuses staged for exhibition at Manchester carried but one truss of flowers, the same as in the case of Auriculas. If it be a good rule in relation to the showing of the Auricula, and especially in so far as it secures the highest refinement in the pips, it is as desirable in the case of the Polyanthus. In the North I did not see a single plant staged for exhibition with more than a single truss, and the fine character of the flowers was very striking. The sorts were few, but they were all good, viz., *Lord Lincoln*; *Exile*, in rare form; *Cheshire Favourite*; *Lancer*; *President*; and *William IV*. The former has a singularly bright and effective golden centre, not so deep as *Exile*, but yet quite luminous, and the pip being of fine shape and the lacing perfect; it was very pure and good. It is a dark variety that will take a lot of beating. *Exile* was very fine, pure in colour, and flat and well-formed in the pip; a little manipulation had something to do with this in all probability, but it was richer altogether than we get in the South. *Cheshire Favourite* was large and beautifully laced, the rich glossy black ground contrasting with the golden lacing. *Lancer* was finely shown—so bright and effective, and with the most regular lacing of all the named varieties; it is a very strong red ground: taking it altogether, I look upon it as the best named Polyanthus I grow. *Hilton's President*, which for three years in my own experience has been deficient in the lacing, was this year nearly perfect. When caught in good form, it is very bright in the centre, an excellent grower, and a model trusser, with a strong stiff erect flower-stem, and a regular well-displayed truss.

We hear sometimes of overpotting Auriculas and Polyanthuses, but it was interesting to note the large size of the pots in which the Polyanthuses were growing in the North. Mr. John Beswick's first prize three were in 24-sized pots; they were in excellent health and very robust, but yet without any taint of coarseness. Mr. Beswick grows his plants in good sweet fibrous loam, sand, and thoroughly decomposed manure, keeping them in a cold frame,

and giving them a little weak liquid-manure made from cowdung, at blooming time. The trusses of bloom contained from five to seven or eight pips—pips of the right size, and well displayed. This is the way in which gold-laced Polyanthuses should be shown; it displaces mere bulk, and puts correct development in its stead, and puts growers on a better footing of equality on the exhibition table.

When Polyanthuses are grown in large pots, they should be potted as early in the summer as possible, even to the sacrificing of seed—that is, if they are not planted out. I am keeping some of my plants in pots, but they have been shifted into a smaller-sized pot than that in which they flowered; and they will get another slight shift in September. Some I am planting out, to be lifted and potted about the end of August.

The impetus given to the culture of the gold-laced Polyanthus in the South by the establishment of the Southern Section of the National Auricula Society, is reacting on the North. A very few years ago and but few plants of gold-laced Polyanthuses could be seen at the Northern Auricula Show. Now there is a decided change for the best—the competing examples have increased, the number of exhibitors doubled, and the raising of seedlings is being pursued with avidity. The two new varieties that came to the fore at Manchester, viz., *Brockbank's John of Gaunt* and *Bolton's Seedling*, will not displace any existing varieties, but they illustrate the activity that is at work. The establishment of a class for the best seedling Polyanthus is a step in the right direction, and it would be well if a similar class were added to the schedule of prizes of the Southern Section of the National Society. There is some talk of a class for the best seedling Auricula being placed in the schedule of prizes of the Southern Section, which will make a capital feature. Perhaps a class for the best seedling Polyanthus will follow in due course. Mr. Samuel Barlow, of Chadderton, is this season blooming a number of seedlings raised from some good crosses, and has already secured three or four flowers of much promise. With others travelling along the same line both North and South, there is much hope of the future.

—R. DEAN.

PULTENÆA ROSEA.



PRETTY, compact-growing, slender, heath-like, greenhouse evergreen shrub, a native of Australia, which was first described by Dr. Mueller under the name of *Burtonia subalpina*, and subsequently under that here adopted. It is of very distinct character, and will be quite an acquisition amongst hard-wooded plants on account of its novelty, and

the neatness of its habit. It comes from the rocky summit of Mount William in the Gram-pians of Victoria, where it grows at an elevation of 5,000 feet, and resembles in its general appearance the small papilionaceous shrubs which used formerly to abound in collections, but which have too generally been allowed to drop out from our collections of greenhouse plants. It was exhibited a year or two since by Messrs. Rollisson and Sons, and was regarded as an acquisition. The accompanying illustration is from the *Gardeners' Chronicle*.



It is described as an erect heath-like shrub, with virgate branches, which are glabrous, or sprinkled with a few hairs. The leaves are linear, terete, under $\frac{1}{2}$ in. long, obtuse, channelled above by the involute margins, slightly scabrous, and with subulate pointed stipules at their base. The flowers are in terminal heads, sessile within the last leaves, and are of a bright rosy-lilac colour, the bracts being few and narrow, the calyx silky pubescent, the petals nearly equal in length, and the acuminate pod two lines long.

Mr. Bentham remarks that this species is chiefly distinguished from *P. hibbertioides* by the unusual colour of the flowers—the very feature which will give it especial interest for our plant-growers and exhibitors of hard-wooded plants, since it will, in some degree, though imperfectly, represent the *Burtonias* which used to be so effectively exhibited some

quarter of a century ago. Being of free-blooming habit, it is, during the early spring months, quite an ornamental object, especially welcome for its distinct colour amongst the pea-flowered shrubs, which at that period are found so useful as greenhouse ornaments.—T. MOORE.

REMINISCENCES OF THE LIFE OF A FLORIST.

HOW I came to be a Florist is soon told. At seven years of age I possessed the earnest love of flowers, which is inbred in most children, and at that time I used to ramble about the fields for miles around my home, from early spring to autumn, searching for wild flowers. In the spring of 1809, the first thing that struck my attention was the common Snowdrop, a quantity of which was springing up, and blooming in a hedge-bottom not far from my home. I did not lose much time in running back for a table-knife, with which I dug up two bunches of the roots with as much earth as I could keep about them, and, carefully placing them in a little basket, proudly marched home. There I had commenced digging up a portion of the border for them, when my father came out to ask what sort of rubbish I was bringing in, and on my showing him my prize, he told me they would not grow in our garden as they did where I had found them; but I thought I should like to try, and as he consented, I planted them. The next flower that specially charmed me was the yellow Crocus, which was blooming in a neighbouring garden. I thought I should like a plant of this, and as I knew the person—one Antony Pearson—in whose garden it was growing, I went to ask if he would sell me a root. His price was 3d. a root, but on learning that I was B. H.'s son, he made me a present of a bunch, which he carefully lifted, told me to carry it home with the earth about it, and plant it, allowing it to remain till past the first Monday in August, when, if I wished to increase the stock, I was to take it up and divide the roots, planting them again about three inches deep and three inches apart. I hastened home with my prize, and at once acted on the advice I had received. The next flowers I took home were the yellow Primrose, and a lot of wild Cowslips from the fields.

After this I went to Pearson's garden again, and what then struck my fancy was the old red Auricula, then called Bear's-ear, or Baizers. I purchased a couple of roots, and one of an-

other kind called Dusty Miller, and these I planted on the same border. Next I got Daf-fodils and other things from the fields. Then I purchased packets of seed, such as Wall-flowers, Stocks, Larkspurs, &c., and with these had a grand show of flowers all that year.

The following spring I went with an uncle to see two different Auricula and Polyanthus shows. They were the first I had seen; one was held in Halifax, the other in Bradford. Previously to going to these shows I had obtained four Auricula plants, supposed to be one of each class; they were called—

Bright Farmer, a green edge.

Emerald Isle, a grey edge.

Pillar of Beauty, a white edge.

Grand Sultan, a purple self.

These I had thought well of before I had seen the Auricula shows; but after this a strange feeling came over my mind all at once, which caused me to think I had been on the wrong track, and there and then I fell out of conceit with all the pets I had previously obtained. However, the same spring I went to see another Auricula show, near Halifax, and there I made a purchase of half a dozen plants, had them brought home in their pots as grown and shown, while at all three shows I took notes of other good things which were exhibited, and in the following August I spent every penny I could get together in securing as many of them as I could. For several years after I went to see the shows all round the country, so that at eleven years of age I had got together a nice collection of my own, and at fourteen years of age I entered for the first time as an exhibitor.

That same year I commenced the Tulip fancy, and three years later I was an exhibitor, not only of Auriculas, but of Polyanthus and Tulips likewise, and three years further on I became an exhibitor of Pinks, Carnations, and Picotees. At that time, and for some twenty years after, growers and exhibitors of florists' flowers were plentiful; so much so, that I could then count them by the score, where now I could not name half a dozen.

From the year 1830 to 1840 and onwards, the older of the most staunch cultivators gradually died off, and there were none of their kin to come forward to fill their places. Besides this, some of the younger men began to fall away from flowers and take up with other fancies. I, for one, however, persevered, and at length I became one of the largest growers of Auriculas, Polyanthus, Tulips and Carnations, and though almost self-taught, I happened to be most fortunate in the cultivation of these different flowers, so that I may truthfully say that from the year 1828 up to 1850-55 I gained more prizes at the various shows of the above-named flowers than almost any other person.—JOHN HEPPWORTH, *Huddersfield*.

VILLA GARDENING.

June.

VILLA GARDENERS are resigned to dispensing with spring this year,—that is to say, the weather is so cold, dull, and uncongenial, as to be the very opposite of what the poets have described as spring like. But some have thought that spring and autumn have changed over a bit; the former now dull, cold, and wet, the latter warm, sunny, and dry. Gardeners of all grades and conditions are sadly in arrears with their work; the crops do not grow kindly, and many seeds have decayed outright in the ground.

Greenhouse.—It is a matter for regret that many of the old hard-wooded greenhouse plants should be so little grown now. *Chorozemas*, *Croweas*, *Boronias*, &c., are fine things, but they are less grown than they used to be, and especially by Villa Gardeners, who prefer plants of quicker growth. Those who grow these may put them out-of-doors in the earlier part of the month, if it be warm and summer-like, choosing a shaded and sheltered position, and in a fortnight or so repotting any that may require it. It is necessary to stand the plants on an ash bottom, to prevent worms coming through, as far as it can be done. These remarks apply to specimen plants, but young stocks are best kept in a cold frame or pit; and when the weather is favourable, the lights may be tilted at the sides, shading from powerful sunshine, watering rather early in the afternoon, at the same time giving a slight syringing overhead, and in the evening reducing the air at the back, leaving only sufficient for night ventilation.

As a rule, Villa Gardeners, who have but limited glass accommodation, look to soft-wooded and quick-growing plants for the decoration of the greenhouse. The *Azalea* should be an exception to this, for it and the *Camellia* can be wintered in a low temperature. They are rarely so fortunate with *Camellias* as with *Azaleas*; the buds of the former are so apt to drop in a vexatious manner, when flowers are anxiously looked for. *Camellias* that have gone out of bloom later than usual (and the spring is a very late one), if wanted for early flowering next season, should be kept warm and syringed, but so that a drier atmosphere may be maintained, and a second growth prevented. Any *Camellias* that need repotting should be shifted, using turfy loam and sandy peat of good quality. *Azaleas* should be encouraged to grow freely after flowering, as it is during the summer that the incipient flower-buds are formed.

The *Mimulus* make an excellent greenhouse plant at this season of the year. Young plants, grown from seeds sown last autumn, or early this spring, in heat, will now be coming into

flower, and, when obtained from a good strain, the flowers will be large and handsomely marked. *Saxifraga nepalensis* is another fine subject; quite small plants throw up immense branched flower-spikes bearing white flowers. Large-flowered *Pelargoniums* should have a few of the side-shoots pinched out, that the main branches may have ample room to develop. Green-fly must be watched for, and the plants fumigated when needed. *Fuchsias* need to be kept tied out into shape; a symmetrical appearance in the plants greatly enhances the aspect of the house when they are neatly arranged. *Zonal Pelargoniums* require pinching back where the shoots are making a more lengthy growth than others: a little thinning out of the side-shoots will be of advantage also. Younger plants of the foregoing, coming on for succession, will require a shift. If they get pot-bound and become dry, serious results follow.

Cold Frames.—*Auriculas* and *Polyanthuses* that have been repotted should be set in the cold frame, where it is cool and moist, at least moister than in the sun. All the hardy plants that were so useful in making the greenhouse gay in early spring, should find a place here if they are not to be planted out in prepared beds. Such things as *Primroses*, double and single, fancy and gold-laced *Polyanthuses*, except they be of scarce and valuable sorts, *Primula nivea*, *intermedia*, *denticulata*, *purpurea*, *marginata*, *japonica*, &c., are all best planted out in good light soil, to make growth during summer, and be lifted in autumn for potting and placing in the cold frame. Pots of *Grape Hyacinths*, *Lilium Thunbergianum*, and others, *Saxifragagranulata*, a delightful subject for pots, *Dianthus*, and *Primula sikkimensis*, are now blooming, and can be taken to the greenhouse as required. Double *Pyrethrums*, *Gladioli*, and a few other things in pots are coming on also. The cold frame comes in handy just now for hardening off *Zinnias*, *Asters*, *Stocks*, *Thunbergias*, *Petunias*, *Lophospermums*, *Tropaeolums*, &c., raised from seed and destined to go out in the open ground; also *Culceolarias*, *Pelargoniums*, *Perilla*, *Centaureas*, *Verbenas*, &c., that are required for the flower-beds, or to fill up places in the mixed border. While the weather keeps wet and cold, and the wind is in the north, only such air as is required to form a sturdy growth need be given; if the opening days of June bring a much desired change, give air more abundantly.

Flower Garden.—All bedding-out operations will have to be done later than usual this year. The ground is wet and cold, and all the plants are late. All that the gardener can do is to harden-off his plants and have his beds prepared, and then put out the most robust subjects first, reserving the tenderest to the last. Well may he ask himself,—Will the summer never come? All spring gardening arrange-

ments will be in their beauty just about the end of June, and if they are not sacrificed, the summer bedding will be very late. Weeds are growing apace in garden walks and on borders, and there is plenty of sweeping. *Creepers* need tying and nailing into place, or they, and especially the strong-growing *Clematisses*, will grow very wild. The decaying flower-stems of *Hyacinths*, *Narcissi*, *Tulips*, *Crown Imperials*, &c., should be cut away as they become shabby, but not a single leaf. *Carnations* and *Picotees*, *Hollyhocks*, *Phloxes*, *Delphiniums*, *Lilies*, &c., need to be staked, and then there is no fear of danger from rude winds.

Kitchen Garden.—Lots of seeds have rotted in the ground, and any that do grow are half eaten by the slugs. The soil lies as cold as it did in winter, and Sol sheds no invigorating heat to warm it into a generous force. The latest crops of *Peas*, some more *Dwarf French Beans* and *Scarlet Runners*, also *Radishes*, should be sown; *Endive* and *Lettuces* planted out; *Onion*, *Carrot*, and *Parsnip* beds weeded and thinned out, as soon as the latter operation can be performed; *Celery* put out into trenches; *Broccoli*, *Brussels Sprouts*, *Savoys*, and *Kales* put out into vacant ground; and *Cabbages* from the seed-beds pricked out into store-beds to grow into size. Sow *Turnips* once a fortnight. Hoe the ground well about crops, and keep the weeds down. Draw some soil about the *Potatoes* coming through the ground, in case of frost. *Beet* should be thinned out as required; to have good roots, they should be about nine inches apart.

Fruit Garden.—Towards the end of the month *Peach* and *Nectarine* trees will require pruning, by rubbing off foreright shoots, i.e., those coming outwards, taking care to leave a good supply of young wood for bearing next year. *Apricots* will require thinning where they are numerous enough, that the fruit may have room in which to swell; towards the end of the month, *Peaches* and *Nectarines* should be similarly treated. We have had to endure several sharp frosts, but there is reason to hope the crops have not suffered materially. In some places the *Plum* blossom has been cut back, but, on the whole, we may hope to have a fair supply of fruit to compensate us for the long winter and the uncongenial spring.—
SUBURBANUS.

A POLYANTHUS EXHIBITION OF THE OLDEN TYPE.

WE have to thank the Rev. F. D. Horner for sending us the following report of a florist exhibition of the real, old-fashioned type,—a small affair, but one of those little inextinguishable embers of true love and interest in florist flowers that have kept the

fire from ever going quite out. It is a list of the prizes given at a Polyanthus Show, held at the residence of Mr. T. Lancashire, Gardener's Arms, Sandy Lane, near Middleton :—

POLYANTHUSES IN PAIRS.—1st prize, John Beswick, for Lord Lincoln and Exile; 2nd, Robert Dyson, for Cheshire Favourite and Exile; 3rd, John Goodier, for Cheshire Favourite and Exile; 4th, Ben Lund, for Cheshire Favourite and Exile; 5th, Adam Oldham, for Cheshire Favourite and Black Prince; 6th, Edward Shepley, for Lancer and Exile; 7th, Samuel Barlow, for President and Exile; 8th, Moses Partington, for Lord Lincoln and Cheshire Favourite; 9th, James Fletcher, for Black Prince and William IV.; 10th, Edward Gaskill, for President and a seedling.


POLYANTHUS, DARK GROUNDS.—Premier prize, John Beswick, for Lord Lincoln; 1st prize, John Beswick, for Exile; 2nd, John Beswick, for Lord Lincoln; 3rd, John Beswick, for Formosa; 4th, Robert Dyson, for Cheshire Favourite; 5th, Robert Dyson, for Rev. F. D. Horner; 6th, Robert Dyson, for Black Prince.

POLYANTHUS, RED GROUNDS.—Premier prize, Robert Dyson, for George IV.; 1st prize, John Beswick, for William IV.; 2nd, John Beswick, for George IV.; 3rd, John Beswick, for Prince of Orange; 4th, Adam Oldham, for President; 5th, Robert Dyson, for Telegraph; 6th, John Beswick, for Napoleon.

POLYANTHUS, SEEDLINGS.—1st prize, Robert Dyson; 2nd, James Fletcher; 3rd, Mr. Edward Schofield; 4th, James Fletcher. The names of the varieties are not reported.

The Judges were Mr. Robert Lord, of Todmorden; and Mr. Ralph Southern, of Bolton. — THOMAS LANCASHIRE.

GARDEN GOSSIP.

 THE EXHIBITION of the ROYAL NATIONAL TULIP SOCIETY, on June 5th, will take place at the Manchester Botanical Gardens, under the presidency of S. Barlow, Esq., who is also the Honorary Secretary. The schedule, which is now issued and may be had of Mr. Barlow, comprises 13 classes, besides which Certificates of Merit will be awarded for rectified Seedlings. The prizes are numerous — from four to eight in each of the classes for stands. The highest prize amongst rectified Tulips (Class 1) is £5, or a cup, for 12 dissimilar blooms, two feathered and two flamed in each class; and the lowest is 5s. The principal prize for Breeder Tulips is £1 5s., for six dissimilar blooms, two of each class. There are 10 prizes in each division of the class for single blooms. Separate prizes of small amount are offered for the best feathered, flowered, and breeder Tulips respectively in the whole show. Prepared labels for marking the flowers, which it is imperative should be used, will be supplied to exhibitors, on demand, a week before the show, by the Secretary, and these labels must be placed on the stands in front of the flowers they represent. The judges are to be selected from amongst persons who are not exhibitors, and are to be instructed to adopt as the basis of their decisions the following points:—Purity, correct marking, symmetry in form, uniformity in size, and perfect dissimilarity. There will be dinner on the day of the show at 2 p.m., when the business of the Society, and the exhibition of 1880, will be considered.

— AT the Show of the ROYAL HORTICULTURAL SOCIETY OF IRELAND, on April 17th, the

following prizes were awarded for AURICULAS :

—9 plants, *distinct*: 1st, Rev. Frederick Tymons, A.M., Baskin Hill, Drumcoudra (Mr. M'Keogh, gardener), for Richard Headley, Mrs. Smith, Sharpe's Mr. Lane, Duke of Wellington, Conqueror of Europe, Stapleford Hero, Robert Trail, Turner's C. J. Perry, and Blackbird; 2nd, Richard Chaloner, Esq., D.L., Kingsfort, Moynalty, county Meath (Mr. Tanham, gardener); 3rd, Francis Wm. Leland, Esq. 6 plants, *distinct*: 1st, Rev. Frederick Tymons, with Metropolitan, Vulcan, Robert Trail, Regular, Blackbird, and Trail's Anna; 2nd, Francis Wm. Leland, Esq.; 3rd, Richard Chaloner, Esq., D.L.

— THE white-edged Seedling AURICULA ACME, shown by Mr. J. Booth, florist, Failsworth, Manchester, in the class for six varieties, at the exhibition of the Northern Auricula Society, at Manchester, and to which a First-class Certificate was awarded, is one of the seedlings raised by Mr. John Read, formerly of Market Rasen, and now of Lincoln. It was named Acme by a jury of leading cultivators, being considered to possess excellent properties, one of the most striking being its almost perfect form. It will be distributed in due course by Mr. Booth.

— AFTER a period of over forty years' active labour, Mr. MARNOCK now purposes retiring from the profession of a LANDSCAPE GARDENER, of which he has been one of the leading ornaments, and a most successful and tasteful exponent. The Botanic Gardens of Sheffield and the Regent's Park were early examples of his genius in the art of laying-out grounds. Mr. Marnock's style was essentially ornate, yet marked by breadth and variety. He will take with him, on retiring from active life, the respect and good wishes of all those who knew him. Mr. J. F. Moston will succeed to his practice.

— NOTING the EFFECTS of the WINTER on CARNATIONS and PICOTEEs, Mr. Dodwell writes that never before have we had a winter so destructive to these plants in suburban gardens. Not one plant which failed to get well upon its legs, and fully prepared for its winter's sleep before the last week of October, survives. Caught by the great depression of temperature in early autumn, the sap never appears to have become set (or inspissated); and though throughout the winter months the plants retained their verdure, and gave promise of vigorous life with the returning spring, yet lacking the warmth of spring, rot gradually set in at the heel, and one after another they succumbed. "Usually," he adds, "I have few plants with which I trouble to 'coddle' during late autumn, but last year I was fortunate enough to bloom a number of promising seedlings, and to the produce of these I naturally gave special attention. In an ordinary season, or in an open situation such as I had at Derby, I should have saved every plant; but long-continued cold, combined with dirt and damp, deplete and destroy in a degree pitiable to witness. Prior to my experience here, I never knew seedling Carnations and Picotees succumb to cold; indeed, I do not as yet know that cold alone can kill them; but though naturally they are as hardy as couch-grass, cold and damp combined are so insidious and so destructive that upwards of 700 plants died under their influence. Last year I cut my first bloom from the seedling beds on May 12, but such is the difference in the character of the seasons that, judging from present appearances, we shall not see a flower this year earlier than July.

— ANOTHER genus WASHINGTONIA—this time a Palm—has been proposed by Mr. Wendland, in the *Botanische Zeitung* (January 31, 1879). This name is suggested for the Palm erstwhile called *Brakea filifera*, then *Pritchardia filifera*, and now *Washingtonia filifera*. Mr. Wendland is now convinced that the differences in the leaves are sufficient to indicate that this Palm is not a *Pritchardia*. Besides, the fruit is quite different, being a black-blue oval, somewhat laterally compressed drupe, from three to four lines long, with remains of a terminal stigma. The principal distinctive characteristics of this fruit are its small size, its oleaginous mesocarp, its thin crumbling endocarp, the small hilum, and the position of the embryo. This Palm was originally introduced by Mr. Linden in 1869, but immense quantities of seeds and young plants have since been imported, so that it is now in most collections. It is easily cultivated, Mr. Wendland adds, provided it is put out-of-doors in the summer, and in the Agave-house in winter. A very rich soil suits it, with plenty of water and not too small a pot.

— THE South African SENECIO CONCOLOR is a handsome-looking perennial plant, somewhat in the style of *S. pulcher*, but with downy leaves which are bluntly oblong, and either toothed, incised, or lyrate-pinnatifid. The flower-heads are in loose corymbs, large, radiate, the ray consisting of about fifty florets, of a lilac-purple colour, and very showy. The plant is a native of Natal, whence it was introduced to Mr. Bull's nurseries.

— THE new Mexican BEGONIA ROEHLII is a very ornamental species of perfectly distinct character, as we learn from flowering specimens sent by Mr. E. Benary, of Erfurt. It has thick fleshy stems, and large one-sided leaves, 10 in. long, dark green, veined beneath with red. The rich crimson flowers grow on longish peduncles, each supporting a short-branched dichotomous inflorescence, which in the bud state is enclosed by large coloured bracts; the bright colour and compact arrangement of the flowers renders them attractive. M. Benary states that plants raised in February or March flower continuously from October until spring. The buds of the inflorescence resemble an opening Pæony, being enveloped in a dark-red spathe, and they rapidly expand into a beautiful umbel of large size, composed of luminous deep red flowers. In a temperate-house, the flowers are freely produced in uninterrupted succession through the winter.

— THE magnificent ROCKWOOD LILY OF NEW ZEALAND, *Ranunculus Lyallii*, has just been flowered for the first time in Europe by Messrs. Veitch and Sons, of Chelsea. It grows from 2 ft. to 3 ft. high, and has the root-leaves peltate, bright green, sometimes as much as 13 in. or 14 in. across, resembling those of a Nclumbium, but quite glabrous. The flowers, which measure 3 inches and more in diameter, are in loose, erect, much branched panicles, and of a pure white colour, something like those of *Anemone Honorine Jobert*, but of a more opaque porcelain-like appearance. The plant grows in moist shady gulleys at a height of 3,000 ft. to 3,600 ft., and is in its native country really magnificent. Messrs. Veitch's plants are growing as bog plants with sphagnum in a cool frame, and plants at Kew are grown under similar conditions.

— THE EXPORT OF DUTCH BULBS has grown

into an important trade. According to the *Times*, the official returns show that the export of flower bulbs during the sixteen years from 1861 to the end of 1876 amounted in value to 19,640,000 Dutch florins, or about £1,636,000, which gives an annual average of over £100,000. It appears that the value has been annually rising. Thus the export for 1876 is set down at 1,666,000 florins (nearly £139,000). According to the latest survey, the land devoted to rearing bulbs of tulips, hyacinths, and similar flowers amounts to 240 hectares, or nearly 600 acres. Of these about 10 acres are in the neighbourhood of Egmont, about 90 around Velsen; while the remaining 500 acres are in the neighbourhood of Haarlem, Schoten, Bloemendaal, and Heemstede. But besides these special localities, where the cultivation of the bulb is carried out on a large scale, there are innumerable small patches scattered all over the country, where tulip and hyacinth bulbs are reared with great success.

— THE Australian MARIA PALM, *Livistona Mariae*, is found in the country inland from Nichol Bay, and in the Macdonnell Ranges in Central Australia. This noble palm is dedicated to H.R.H. the Duchess of Edinburgh, and we shall soon be able to place it along with *L. australe* and the Alexandra palm in European conservatories. It attains a height of 60 ft., the leaves being as much as 6 ft. long. It is remarkable that no Fan-Palms are known from the north coast of Australia, all being confined to the east-coast regions, except the Maria Palm, which seems quite restricted to a solitary locality in Central and in West Australia. Dr. Mueller also states that the *Areca Normanbyana* is now found to belong to *Ptychosperma*, and is to be called *Ptychosperma Normanbyana*; it is the *Saguerus australasicus* of Wendland and Drude.

— THE RAVENEA HILDEBRANDTI, an elegant dwarf new Palm, discovered by Mr. J. M. Hildebrandt, the African traveller, on Johanna Island, one of the Comoro group, situated midway between Madagascar and the mainland of Africa, has recently been figured in *Der Deutsche Garten*. In its native country it grows 8 ft. to 10 ft. high. The pinnately-divided leaves are described as dark green, beset with prickles on the underside, and in healthy plants nearly as broad as long. It grows quickly in a moderate temperature, and is recommended for the temperate house. Both of the horticultural societies of Berlin awarded it the prizes offered last summer for new plants. Only a small stock of it exists in Europe at present, but it is expected that Mr. Hildebrandt will soon send more seeds.

— THE NEW FASTIGIATE SILVER POPLAR has, according to Professor Sargent, been called *Populus alba Bolleana*, in compliment to Dr. C. Bolle, of Berlin. Several very finely grown specimens of this pyramidal Silver Poplar may be seen, it is said, in the public garden of Teflis, and as the garden was laid out and planted by a fugitive Persian prince, whose name it still bears, it is probable that this tree was originally brought from Persia. The Fastigate Poplar is perfectly hardy, grows rapidly in any slightly moist soil, and is particularly remarkable for its habit and great size, completely dwarfing the Italian Poplar with which it is associated. The bark, even in old specimens, is smoothed as if it were polished; it is of a clear bluish-green colour, without spots or cracks. The ramification is strong and characteristic. The brilliant

white of the lower side of the leaves, which remains unchanged in its purity throughout the summer, makes a strong contrast with the dark green of the upper side, producing a striking effect, and rendering this tree visible at a long distance. The wood of the fastigiate poplar is of finer quality and more highly esteemed than that of the other poplars. It is an ornamental tree of the first order, and cannot be too highly recommended.

— THE now famous BERKHAMPTED MUSCAT GRAPES promise to be fully equal this year to what they have been in former seasons. These Vines, which have now been about ten years planted, have borne very remarkable crops for some years in succession, and if all goes well, we may expect to see next autumn more of those splendid amber-coloured clusters which the Messrs. Lane and Son usually stage for exhibition. These Vines are planted on gently sloping ground close by a perpetual spring, and therefore have not the dry bottom which was once thought to be so essential, and yet no better finished Grapes than these are ever seen, either in private establishments or public exhibitions. There has been in this case, moreover, no fuss about border-preparation or border-renewal, but they are planted in natural Hertfordshire loam; nor has there been any attempt at border-protection during the present long and inclement winter.

— AMONG NEW BOOKS received, Mr. Rothschild, of Paris, has sent us three manuals for students, namely, *Traité de Botanique Élémentaire*, *Éléments de Matière Médicale*, and *Traité de Minéralogie*, all by Dr. J. Leon Soubeiran, which may be commended in their respective walks as good and useful elementary treatises on the subjects indicated. They are all intended for the use of students of medicine. The first comprises a summary of structural botany, and a brief account of the natural orders of plants; the second is a condensed account of the principal medicinal substances and drugs employed; and the third comprises a brief account of the principal minerals and metals. They are all profusely illustrated, and very successfully provide for the wants which they were prepared to meet.—*Le Monde Sédéral* is a similar illustrated account of the starry world, which may be recommended for its clearness and brevity, and which may also serve for young gardeners and others as a lesson in French.—*A Travers Champs (Across the Fields)*, by Madame J. Le Breton, gives us a history of the principal natural families of the vegetable kingdom, in the form of a dialogue between student and teacher. It is freely illustrated with numerous woodcuts, and is very well adapted for those who wish to arrive, by leisurely stages, at a knowledge of the plants growing around them, or to read an occasional chapter on this branch of natural history.

— THE DAVENHAM EARLY MELON is a new variety shown before the R.H.S. Fruit Committee on May 13th, where it gained a First-class Certificate. It is a medium-sized, ribbed and netted, green-fleshed variety, and proved to be of excellent quality. It came from Mr. Jacques, gardener to J. D. Perrin, Esq., Davenham Bank, Great Malvern, and was stated to be the result of a cross between Turner's Scarlet Gem and Bromham Hall.

— A new strain of PRIMULA SINENSIS, quite different from any of the forms previously known, has been sent to us by Mr. Bull, of

Chelsea. The leaves are of the palmatifid type, but the edges, instead of being simply toothed, are first toothed and then enrlled or crispatc, which gives them quite a distinct aspect. The flowers are white, with a greenish-yellow eye, semi-double, the margins of the corolla minutely and prettily cut into fine sharp teeth, much smaller than those of the ordinary fimbriated Primulas. This new form reproduces itself true from seed.

— THE curious American SCOLIOPUS BIGELOWI has been flowered during the past spring by Mr. Ware, of Tottenham. It is a most singular-looking plant, related to Trillium, and has a pair of broad, ovate leaves, which are deep green, spotted with black, which lie on the surface of the soil. From between these leaves arise some half-dozen blossoms on slender stalks, from 2 in. to 3 in. long, and 1 in. across, triangular in outline, with the three broadest divisions greenish, heavily pencilled with deep chocolate, the three other segments hair-like, and curved inwards. It inhabits the vicinity of the Tamur Pass, not far from San Francisco, whence it was introduced by Mr. Ware.

Obituary.

— MR. WILLIAM TILLERY died on April 25th, after a short illness, at the age of 71. He had been for the long period of 45 years gardener to the late and present Dukes of Portland at Welbeck Abbey, Notts, where, in charge of perhaps the largest forcing establishment in the country, he proved himself a most accomplished practitioner, and became a sound exponent of all that was good in connection with his profession, as our pages bear frequent testimony. He was born in 1808, and commenced his gardening career at Fullerton House, Ayr, where his father was gardener and forester to the late Duke of Portland. Subsequently he was employed in the gardens at Eglinton Castle, at Malcolm's Nursery, Kensington, at Caenwood, Highgate, at Oakhill,—the latter place famous for its fine Grapes. In 1832 he succeeded his father as gardener at Fullerton House, from whence five years later he was removed to Welbeck, in succession to the late Mr. Mearns. Amongst practical gardeners of the present generation, no name will be held in higher esteem than that of William Tillery.

— MR. ARCHIBALD HENDERSON, nurseryman, of Thornton Heath, near Croydon, died a few weeks since in his 53rd year. He commenced his gardening career at Yester, and subsequently moved to Trentham, from whence he was appointed gardener to the Earl of Zetland, at Aske Park. In 1857 he became foreman and assistant to the late Mr. McEwen, in the Horticultural Society's Garden, Chiswick, and shortly after, on Mr. McEwen's death, he succeeded to the post of superintendent, which he resigned the same year, on being selected to take charge of Trentham Gardens. Here he remained for a few years, and then removed to Thornton Heath, where he has since carried on a successful trade as a nurseryman and florist.


— PROFESSOR GRISEBACH, the eminent botanist and geographer of Göttingen, died on May 7th, in his 66th year. He was born in 1814 at Hanover, and in 1841 was called to Göttingen as Professor of Botany and Director of the Botanic Garden, a post which he has held ever since.



No. 1. *Paeonia officinalis* (Paeonia) (Paeonia)
 Paeonia officinalis (Paeonia) (Paeonia)

AZALEA INDICA EMPRESS OF INDIA.

[PLATE 493.]


HE merit of this new Indian Azalea is sufficiently attested by its having successfully passed the trying ordeal of appearing before the R.H.S. Floral Committee, and by its having received from that august body the award of a First-class Certificate. We have no doubt whatever that this award fairly indicates the quality of the flower, and hence we have much pleasure in introducing its portrait to the English public. The variety is of Belgian origin, and was raised by M. Van der Cruyssen, and exhibited by him at the Ghent show in 1878, under the provisional name of Héros des Flandre. It has since then passed into the hands of M. Auguste Van Geert, of Ghent, by whom it is now being distributed, under the name here adopted.

The Azalea Empress of India will take rank amongst the finest of recent acquisitions. Its compact-growing habit and dark green foliage are all that can be desired, while its blossoms are remarkable not only for their size and sub-

stance, but also for their symmetry. The flowers are four inches in diameter, perfect in form, the outer segments of the corolla well expanded, even at the edge, and fully displaying the tuft of numerous smaller petaloid segments which fill up the centre. The colour is a pleasing tint of rosy-salmon, feathering out towards the well-defined but narrow band which borders each lobe, the upper segment being, in addition, blotched with a dense mass of deep crimson dots. The central petaloid segments are of the same rosy colour, and similarly bordered with white.

We understand that this variety is, like most of its race, a free-blooming kind and of vigorous constitution, so that it may be looked upon as a valuable addition to the many fine Belgian varieties which have been recently introduced, and which have proved so important and valuable as decorative and exhibition plants. As to the individual beauty of the flowers, the accompanying illustration speaks for itself.—T. MOORE.

HIPPEASTRUMS AND THEIR BREEDING.

HE present fine breed of Hippeastrums (popularly called Amaryllis) has been obtained from four distinct types, viz., Solandraeflorum, Aulicum, Vittatum, and Pardinum. 1. The Solandraeflorum breed is easily recognised by its having a long tube, with the segments recurved at the extremity. 2. Aulicum is the type from which Ackermanni and Ackermanni pulcherrima and such brilliant-coloured varieties sprang, and is notable on account of the base of the segments being green. 3. Vittatum is the breed from which the light or striped, or carnation-coloured varieties came, and is clearer and better in colour, although very much wanting in form; Marginatum conspicuum is the best known example of this type. 4. Pardinum is the most prominent in its original characters, being the best formed, and from its rich spotting it has become invaluable to the breeder. Johnsoni has been considered by some to be one of the original types, but so far as I have been able to discover, it appears to me to be a seedling off Vittatum crossed with Aulicum, and consequently only the beginning of an improved breed.

No. 19. IMPERIAL SERIES.

As a breeder, I have found that by far the best types to deal with are the progeny of Solandraeflorum crossed with the best forms of Aulicum, after it has been in-and-in bred for a time; and Pardinum, crossed with the dark-coloured or Aulicum breed. In the first case, we get colour and form and substance, although it has been difficult to get the green eradicated from the base. Now, in certain seedlings which I have proved, instead of green bases, I have them deeper than the segments, as an instance of which I might name Angus McLeod, which obtained a first-class certificate in Edinburgh; that variety has deep crimson segments, broad and excellently formed, with a maroon base—probably one of the greatest gains in its way that I have got. Pardinum has been an excellent pollen parent, but almost steadily refuses to be a seed-bearer on its own account. I have been able to get some of its progeny, particularly through the Solandraeflorum blood, to be seed-bearers, crossed with collateral varieties, and in all cases there has been a good per-centage of valuable seedlings produced therefrom.

What, however, has been a *desideratum*, and which has been most difficult to manage of all the aims of a cross-breeder, was to reproduce seedlings of free-flowering tendency, with stout, broad foliage, and comparatively short scapes. It has only been by an interfusion of blood that this has become practicable, and even now such distinguished representatives of their different classes as William Pitt as representing *Solandraeflorum*, Ackermanni *puleherrima* as representing *Aulicum*, *Marginatum conspicuum* as representing *Vittatum*, and even *Pardinum* itself, are completely beaten out of court by some of the most advanced seedlings of the present day.

From a decorative point of view, the four types above mentioned may now be merged into three, as follows:—

1. The *Solandraeflorum* type.—This ought to have broad segments, the colours, whatever they may be, well defined, with the segments turned partly over at the extremity, the flowers of great substance and fine general outline. The best variety I have seen of this type is Mrs. Findlay, which was certificated at Manchester.

2. The *Aulicum* type.—This ought to have the segments standing out smoothly to the extremity, not turned over, showing no disposition to “tube,” as in *Solandraeflorum* type, and all the better if the colours remain uniform to the base; if they vary, they should form a brighter star of colour than that of the general surface. The slightest green in this type is a defect.

3. The *Pardinum* type.—This should have the same form as the second, only differing in being spotted or blotched—the more regularly the better. The segments should be nearly uniform, and the colouring, whatever it is, should be faultless to the base.

The whole should have short broad foliage, like a well-grown hyacinth; the scape strong, and not too long; and the flowers, whether in pairs, in fours, or as they sometimes come, in fives and even in sixes, like *Vallota*, should stand at right angles to each other.

At least, such is my idea of what a good *Amaryllis* should be, and it may help your readers, or such of them as care for the breeding of this fine family, to shape their manipulations accordingly.—JAMES ANDERSON, *Meadowbank Nurseries, Glasgow.*

VICOMTESSE HERICART

D'THURY STRAWBERRY.

MANY of your readers can remember the introduction of Keens' Seedling Strawberry, which became such a favourite that it was sometimes known as the “gardener's friend.” Then there came trooping at its heels, Alice Maud, President, and a host of other good kinds, and now there has appeared in our midst the Vicomtesse Héricart d'Thury, which is unquestionably the queen of Strawberries. There is no variety with which I am acquainted that can hold the candle to it. It has a splendid constitution, grows like a weed, keeps evergreen all the winter, crops magnificently, sets its fruit freely, and is not subject to mildew. The fruit is of a bright vermilion, and has a good flavour. I forced some 800 of it this year, and so satisfied am I of its superiority for this purpose, that not another variety shall be forced next year, but this and this alone. To those who have not gone in for this excellent kind, I would say, then do so, and you will not be disappointed.—J. RUST, *Eridge Castle.*

LASTREA ARISTATA

VARIEGATA.

NO doubt this is one of the most ornamental evergreen ferns which have recently been introduced to our gardens. It came to us from Japan, and has been frequently exhibited during the past season, both by Messrs. Veitch and Sons and Mr. W. Bull, to the latter of whom we owe the use of the accompanying figure, which very well illustrates the peculiar features of the plant. The species is well known as occurring in somewhat varying forms in India, the Pacific Islands, New South Wales, Natal, and Japan, and, as might be expected, is of a hardy constitution, growing best indeed in a greenhouse, but probably very nearly hardy enough to bear the rigours of our climate in an ordinary season. The variety is probably equally hardy, but it is well worth the shelter of a greenhouse, its permanent character and elegant variegation being sufficient to recommend it.

Lastrea aristata has a slowly-creeping caudex, and produces fronds of from 1 ft. to 2 ft. high. The texture of the frond is rigid and



coriaceous, and the colour a deep glossy green. The fronds are pentangular in outline, the posterior basal pinnule being more largely developed than its fellows, so that the fronds are pedately bipinnate, the principal divisions or pinnæ being linear, tapering to a point. The pinnæ are divided into short, close-set pinnules, which have spiny-pointed teeth. The sori are sometimes covered by peltate indusia, as in *Polystichum*, and sometimes by reniform indusia like those of *Lastrea*, and probably sometimes by neither, since it belongs to a set in which the indusium is not always well defined.

The new variety differs from the foregoing only in the presence of a broad band of very pale yellowish-green, which runs down the base of the pinnules, and forms a broad, pallid stripe, in which the rachis is included.

We can commend this fern with much confidence to the notice of every lover of orna-

mental plants, and we have no doubt it will become largely grown for general decorative purposes.—T. MOORE.

A DAY AT KNAP HILL.

THE display of Rhododendrons and Azaleas at the Knap Hill Nursery is a glorious sight, when the atmospheric conditions are favourable. Then the sunshine lights up with brilliancy and beauty the rosy and carmine tints of many of the modern flowers, and the effulgent glow of the Azaleas is almost dazzling. In many seasons the Azaleas are found to be in advance of the Rhododendrons, but the peculiarities of the past winter and spring seem to have brought them on together, and the result is a mixture of colours which heightens the charms of both. The hardy Azaleas now in cultivation are most attractive

plants, from the masses of colour they present, but they are as nothing compared with a new race of hybrids, which have here been worked up in this nursery to a very high pitch of merit, and of which we shall hear more by-and-by.

In the meantime, there are now available varieties of remarkable brilliancy or delicacy of colouring, and whose only fault is that they bloom before the leaves appear—a defect which it has been sought with much success to remove in the newer varieties alluded to. In beds and borders, and sheltered bays, spread over acres of ground, and perfuming the air with their fragrance, the yellows, and pinks, and scarlets, and intermediate tints of the Azaleas, and the whites, pinks, and purples, or deep rose magenta or carmine hues of the Rhododendron, seem almost endless. The picture is, indeed, a richly-coloured one, which, once seen, is not easily forgotten.

The past winter, as happens in the case of all those which are severe, has sternly tried the hardiness of the different varieties, and many well-known sorts cut but a sorry figure, from the buds being more or less frost-bitten, and the flowers killed in the incipient state, so that few of the blossoms in the truss come to perfection. Those who intend to plant should look to this, and see that they obtain only such sorts as bear the stamp of hardiness, both in foliage and flowers. There is as much difference in the leafage as in the inflorescence of the Rhododendron, viewed in reference to the effect of the plant as a hardy evergreen bush. Some have bold enduring foliage, while in others the leaves fall readily, and leave but a beggarly account of scraggy branches. And in respect to the flowers, some throw bold and perfect trusses even after the severest winters, while others develope only the miserable remnants of trusses which have only just escaped utter destruction by frost.

In our peregrinations we noted down the names of a few of those varieties which are free from the defects at which we have hinted, and those who plant these sorts under fair conditions will not be disappointed. The first we note is called *Lady Armstrong*, one of the most fascinating of Rhododendrons, bearing immense compact conical trusses of large flowers, the colour of which is a sparkling light but bril-

liant rose, with the centre paler than the other parts of the flower. *Kettledrum* is another of the hardiest amongst the hardy—a rich deep purplish-tinted rose, which stands out everywhere striking and effective. *Archimedes*, a light rose with paler centre, is undamaged by the frost. *Scipio* is remarkable for its dense leafage and its abundant, large, compact flower-trusses of a rosy-pink, marked on the upper segment by a rich black blotch. *Caractacus*, a magenta-rose, with blotch of black dots, is a striking sort. *Meteor* is a brilliant crimson-red, very rich and glowing in colour. *Mrs. Milner* and *H. W. Sargent* are noble flowers, of a splendid crimson-rose, bold in truss and in foliage, and amongst the most telling. *Old Port*, a rich plum-purple, is indispensable, both for its merit as a flower, its hardiness as a shrub, and its distinctness of character. *Agamemnon* is a fine claret-red, with a white centre. While the old *Everestianum*, with its charmingly fringed lilac flowers, is still a telling and distinct-looking sort, as is the old *Fastuosum flore-pleno*, with its double-purple blossoms. *Minnie* and *Mrs. John Clutton* are conspicuous amongst the whites.

Of newer sorts, *Sappho* is a very grand and striking variety, large and bold in the flower and truss, the colour a clear white, with a large blotch on the upper segment, so dark as to appear black by contrast; nothing can be more strikingly effective than this. *J. Marshall Brooks* is another grand flower, of a rich and lovely crimson, with a large blotch of bronzy or yellowish green spots on the back segment, which renders the clusters very telling, and gives a distinctness of character which is most desirable. A third very fine and distinct variety, having all the virtues, is *Mrs. Shuttleworth*—hardy, forming a good bush and an equally good standard, and bearing compact trusses of finely-shaped flowers, which are of a rich crimson, with a white blotch on the upper segment, the blotch being almost covered by black spots—the effect of this dash of white in lighting up the centre of the flower is marvellous. *Charles Fisher* is a rich crimson-rose, well spotted, and a fine trusser, every way first-class. *Lady Grey Egerton* is remarkable for its immense compact trusses of blush-coloured flowers, which are of the largest size. In *Sigismund Rucker* we have perhaps the

finest hardy *Rhododendron* ever raised, a close and bold well-shaped truss of deep puce-rose flowers, marked with a large and very distinct black spot. This a fine and distinct half-dozen.

The sorts we have mentioned by no means exhaust the list, nor do they form anything like a full selection of the best sorts grown: they are simply a record of some, new and old, which especially attracted our attention as having escaped unhurt, while many others have been sorely punished by the severity of the past winter.—T. MOORE.

NEW FUCHSIAS.

IT has been observed that the *Fuchsia* has made little or no advance during the last few years, but this is a great mistake. For instance, *Bland's New Striped*, represented in the accompanying engraving, is in every way a first-class *Fuchsia*, and quite equal in shape, colour, and growth, &c., to Mr. Banks's best; indeed, it very much resembles the well-known *Enoch Arden*, from which it must have been a seedling. The striped kinds have hitherto shown the markings in their corollas very faintly, but this presents a very bold, distinct, and regular stripe, and when seen in its best state, it is the admiration of all beholders.

Jeanne d'Arc, by reason of the perfection of its unequalled flowers, leaves all those varieties with a white corolla far behind; its pearly-white is most lovely. In fact, it is in all respects a most charming *Fuchsia*, its corolla being very large and spreading.

Kingsburyana has something of the same character, but has a double corolla, which is very large and spreading. In this flower part of the corolla is attached to the calyx-tube; and in some flowers, these parts are connected for quite half the length of the under-side of the reflexed sepals. It is a strong grower, and very showy.

White Giant is another somewhat similar to the preceding, with immense double flowers. This, with *Miss Lucy Finnis*, shows a decided advance on all others in the class of varieties with white corollas; and they are now grown for market in great quantities, both in Europe and America.

Mr. Lye has added several very strong-growing sorts, carrying immense large racemes of blooms. Thus *Blushing Bride* is particularly

striking, and may probably some day form a good-sized tree, in some sheltered situations. It has a white tube and sepals, with scarlet corolla, and is in all respects a very good flower.




Lord Beaconsfield is a very strong-growing novelty, bred from *F. fulgens*, and producing large bunches of flowers almost continually throughout the year, so that for cut flowers it is especially valuable; and although its colour is not very striking, it makes a capital outdoor kind.

Aurora Superba is another very desirable kind, somewhat resembling the preceding, but with far more attractive-coloured flowers, which present a decided yellow shade, not previously seen in the *Fuchsia*.

Ethel is one of the varieties with a pure white tube and sepals, the tube being most unusually long, often three to four inches in length, with well-reflexed sepals, and a bright lake-coloured corolla, which peculiarity, together with its long tube, gives it such a remarkably distinct appearance, that few forget it who have once seen it.—H. CANNELL, *Swanley*.

ROYAL NATIONAL TULIP SOCIETY.

HE Annual Show of this Society took place on June 5th, at the Botanical Gardens, Stretford, in connection with the great Whitsuntide flower-show of the Manchester Botanical and Horticultural Society. Owing to the extreme backwardness of the season, and to the ungenial character of the weather almost up to the opening of the great show, the Tulips were expected to be very limited in number; but the fine weather with which Manchester was favoured in the early part of the Whitsun week, added to the much warmer atmosphere, had a remarkably hastening effect on the flowers, so much so, that some blooms that were despaired of in the early part of the week developed into very fair size by the day of the show, and were also finely marked. Mr. T. Haynes, of Derby, Mr. W. Whittaker, of Salford, and the Rev. F. D. Horner, of Kirkby Malzeard, staged many flowers that were surprisingly good, considering the season, and the classes were generally filled beyond the expectation of the promoters. With the exception of the Rev. F. D. Horner, who was the only Northern grower proper, and whose flowers had enjoyed the protection of glass, the other exhibitors were from the Midland districts, and the more southern part of the North. The following is a record of the names of the prize-takers, and of the winning flowers:—

12 TULIPS, dissimilar, two feathered and two flamed in each class:—Premier prize, a Cup, Rev. F. D. Horner, Kirkby Malzeard, Ripon, whose flowers were generally remarkable for their purity and rich colouring; they included Madame de St. Arnaud, Dr. Hardy, Commander, Modesty, Mrs. Cooper, Talisman, Madame de St. Arnaud, being shown both feathered and flamed; Demosthenes, Duchess of Sutherland, Bessie, Mabel, and Ajax. Mrs. Cooper, feathered rose; Modesty, feathered rose; Bessie, feathered byblœmen; Commander, heavy feathered bizarre; Madame de St. Arnaud, bright feathered rose; Dr. Hardy, red-feathered bizarre; Talisman, flamed byblœmen; and Mabel, feathered rose, were all of fine quality. 2nd, Mr. T. Haynes, Derby, with Aglaia, Dr. Hardy, Mrs. Lea, George Hayward, Queen of the Universe, Helena Mary, Duchess of Sutherland, Mrs. Lomax, Adonis, Sir J. Paxton, Mrs. Lomax, and Sir J. Paxton. In this stand, Sir J. Paxton, feathered bizarre, was very fine; Helena Mary, feathered byblœmen, was also in fine form; Dr. Hardy was in good flamed character; old Aglaia, very good; Adonis, cleanly feathered. 3rd, Mr. D. Barber, Stanton-le-Dale, with Sovereign, Aglaia, Martin's 101, Adonis, Masterpiece, Queen of England, Bessie, Mrs. Lea, Dr. Hardy, Nepalese Ambassador, Sir Joseph Paxton, and Charmer. The leading flowers in this stand were Martin's 101, feathered byblœmen; Adonis, richly flamed; Queen of England, a finely flamed rose; and Nepalese Ambassador,

flamed byblœmen. 4th, Mr. W. Whittaker, Salford, who had Masterpiece, feathered bizarre, in good form; and Mrs. Lea, feathered rose, handsomely marked. 5th, Mr. D. Woolley, Stockport.

6 TULIPS, dissimilar, one feathered and one flamed in each class:—1st, Rev. F. D. Horner, with Talisman, Mabel, Commander, Sir J. Paxton, Mrs. Cooper, and Bion (Barlow), the latter a very fine feathered dark rose. 2nd, Mr. T. Haynes, with Sir J. Paxton, Aglaia, Heroine, Bessie, Sulphur, and Violet Aimable, Sulphur being in fine feathered character. 3rd, Mr. W. Whittaker, with Mrs. Lea, Bessie, Prince of Wales, Adonis, Aglaia, and Masterpiece. 4th, Mr. D. Barber, with No. 105, Annie Macgregor, Duchess of Sutherland, No. 105, Aglaia, No. 371. 5th, Mr. W. Wardle, Burton-on-Trent. 6th, Mr. T. Mellor, Ashton-under-Lyne. 7th, Mr. J. Morris, Leigh.

6 TULIPS, one feathered and one flamed in each class, for half-guinea subscribers only:—1st, Mr. H. Houseley, Stockport, with Mabel, both feathered and flamed; Violet Aimable, feathered and flamed; Lord Byron, and President. 2nd, Mr. R. Yates, Leigh, with Aglaia, Adonis, Sir J. Paxton, Lady Lilford, and two unknown. 3rd, Mr. J. Turner, Stockport, with Ajax, Aglaia, Madame de St. Arnaud, Cock of the Rock, and two unknown.

3 TULIPS, feathered:—1st, Rev. F. D. Horner, with Heroine, rose; Mrs. Cooper, byblœmen; and Storer's No. 6, bizarre. 2nd, Mr. W. Whittaker, with Adonis, byblœmen; Mrs. Lea, rose; and Masterpiece, bizarre. 3rd, Mr. D. Barber, with George Hayward, bizarre; Exile, byblœmen; Charmer, rose. 4th, Mr. R. Yates. 5th, Mr. J. Hague. 6th, Mr. H. Houseley.

3 TULIPS, flamed:—1st, Rev. F. D. Horner, with Lady Sefton, rose; Adonis, byblœmen; and Orion, bizarre. 2nd, Mr. T. Haynes, with Aglaia, byblœmen; Sir Joseph Paxton, bizarre; and Bessie, rose. 3rd, Mr. W. Wardle, with Sir Joseph Paxton, Adonis, and Aglaia. 4th, Mr. T. Mellor. 5th, Mr. D. Barber. 6th, Mr. W. Whittaker.

2 TULIPS, one feathered and one flamed, of any class, for maiden growers only. This class brought but one competitor, viz., Mr. J. Turner, who was awarded the 1st prize for Abbott's Gem and Aglaia. In the open class for the same, viz., two varieties, one feathered and one flamed:—1st, Rev. F. D. Horner, with Dr. Hardy and Modesty. 2nd, Mr. W. Whittaker, with Masterpiece and Prince of Wales. 3rd, Mr. D. Woolley, with Masterpiece and Captain White. 4th, Mr. H. Houseley, with Masterpiece, both feathered and flamed. 5th, Mr. J. Turner. 6th, Mr. J. Cato.

TULIP, one feathered and one flamed, dissimilar, with the exception that the variety winning the first prize may win once again (this condition running through the five following classes):—1st, Mr. T. Haynes, with Masterpiece. 2nd, Rev. F. D. Horner, with Duke of Devonshire. 3rd, Mr. H. Houseley, with Masterpiece. 4th, Rev. F. D. Horner, with Tiny Tim. 5th, Mr. R. Yates, with Masterpiece. 6th, Mr. T. Haynes, with George Hayward. 7th, Mr. T. Haynes, with Sir J. Paxton. 8th, Mr. D. Barber, with Model of Perfection. 9th, Mr. J. Turner, with Abbott's Gem. 10th, Mr. T. Haynes, with Sulphur.

TULIP, one feathered rose:—1st, Rev. F. D. Horner, with Modesty; 2nd, with the same; 3rd, with Heroine; 4th, with Mrs. Lomax; 5th, with Sarah Headly. 6th, Mr. T. Whittaker, with Rachel; 7th, with Catherine. 8th, Rev. F. D. Horner, with Aglaia. 9th, Mr. R. Yates, with Lady Lilford. 10th, Mr. Whittaker, with Mabel.

TULIP, one feathered bybloemen:—1st, Rev. F. D. Horner, with Bessie; 2nd, with the same; 3rd, with David Jackson. 4th, Mr. T. Haynes, with Mrs. Pickerell. 5th, Rev. F. D. Horner, with Friar Tuck. 6th, Mr. Whittaker, with Violet Aimable. 7th, Mr. D. Barber, with Clara; 8th, with Exile. 9th, Mr. Whittaker, with William Bentley; 10th, with Gavazzi.

TULIP, one flamed bizarre:—1st, Rev. F. D. Horner, with Masterpiece. 2nd, Mr. Haynes, with Sir Joseph Paxton. 3rd, Rev. F. D. Horner, with Lord Sydney. 4th, Mr. R. Yates, with Masterpiece. 5th, Mr. T. Haynes, with William Lea. 6th, Mr. W. Whittaker, with Lord Delamere. 7th, Rev. F. D. Horner, with Dr. Hardy. 8th, Mr. T. Haynes, with San Jo. 9th, Mr. J. Hague, with Prince of Wales. 10th, Mr. D. Barber, with Merit.

TULIP, one flamed rose:—1st, Rev. F. D. Horner, with Aglaia. 2nd, Mr. T. Haynes, with Aglaia; 3rd, with Mrs. Lomax. 4th, Mr. H. Housley, with Rose Celestial. 5th, Mr. W. Whittaker, with Mrs. Lea. 6th, Mr. T. Haynes, with Sarah Headly. 7th, Mr. W. Wardle, with Lady Catherine Gordon. 8th, Mr. D. Woolley, variety unknown. 9th, Mr. R. Yates, with Lady Lilford. 10th, Mr. S. Barlow, with Mabel.

TULIP, one flamed bybloemen:—1st, Rev. F. D. Horner, with Aglaia. 2nd, Mr. T. Haynes, with Talisman. 3rd, Rev. F. D. Horner, with Duchess of Sutherland. 4th, Mr. R. Yates, with Adonis. 5th, Mr. T. Haynes, with Britannia. 6th, Mr. W. Whittaker, with Lord Denman. 7th, Rev. F. D. Horner, with David Jackson. 8th, Mr. T. Haynes, with Bessie. 9th, Mr. J. Hague, with Trip to Stockport. 10th, Mr. D. Barber, with Nepalese Ambassador.

6 BREEDER TULIPS:—1st, Mr. T. Haynes, Derby, with Dr. Hardy, Talisman, Mabel, Adonis, Madame de St. Arnaud, and Mrs. Lea. 2nd, the Rev. F. D. Horner, with Alice Grey, Music, Annie McGregor, Dr. Dalton, Lady Grosvenor, and William Lea. 3rd, Mr. D. Barlow, with Mabel, Industry, Talisman, and three seedlings.

3 BREEDER TULIPS:—1st, Mr. T. Haynes, with Madame de St. Arnaud, William Lea, and Alice Grey. 2nd, Rev. F. D. Horner, with Storer's No. 4, Talisman, and Annie McGregor. 3rd, Mr. D. Woolley, with Mabel, Saucta Sophia, and Sir J. Paxton.

TULIP, bizarre breeder:—1st, Mr. D. Barber, with William Lea. 2nd, Mr. W. Whittaker, with Richard Yates. 3rd, Mr. T. Haynes, with Lea's No. 2. Then followed, in the order of merit, Sir J. Paxton, Dr. Dalton, Mrs. Harwood, and Dr. Hardy.

TULIP, rose breeder:—1st, Mr. H. Housley, with Industry. 2nd, Rev. F. D. Horner, with Lady Grosvenor; 3rd, with Mabel; and following these were Modesty, Oliver, and seedlings.

TULIP, bybloemen breeder:—1st, Mr. T. Haynes, with Adonis. 2nd, Mr. T. Mellor, with Leech's Alice. Then followed Miss Hardy, Talisman, Earl of Warwick, and Alice Grey.

The Premier Feathered Tulip was Mrs. Cooper, bybloemen, from the Rev. F. D. Horner; the Premier Flamed Tulip, Sir Joseph Paxton, bizarre, from Mr. T. Haynes; the Premier Breeder Tulip was William Lea, from Mr. D. Barber.

The following notes on some of the leading varieties shown in the various stands will, no doubt, prove interesting. Some are old flowers, which appeared in good condition, and some are novelties of fine character:—

The premier feathered tulip, *Mrs. Cooper*, shown by the Rev. F. D. Horner, was an exquisite

feathered bybloemen, richly and perfectly marked, and distinguished as the premier feather, as well as being the most noticeable bloom in Mr. Horner's stand. A short history of this highly valuable tulip will doubtless have a special interest in this relation. It first distinguished itself many years ago in the collection of Samuel Barlow, Esq., Stakehill House, taking a place more than once in his winning stand of twelve blooms shown for the cup. Its settled name is now Mrs. Cooper, but it was for a time called Rutley's Queen, through being supposed to be a splendid break of that variety. However, a few years since, a bulb of it, grown by the Rev. F. D. Horner, at Kirkby Malzeard, bloomed in a flamed character, just for once, and revealed by a trace of the mother-colour at the base of one petal that it had broken from a dismal slaty breeder then known as Boardman's No. 1, of aspect so unlovely that Mr. Barlow had sternly destroyed it, as it showed itself in his collection. The breeder is not now known, and this one supreme strain stands alone in the world. Another flower of note in Mr. Horner's cup-stand was *Modesty*, a perfect and pure feathered rose, with an intensely bright scarlet feather and lovely white ground. This is an eccentric flower in some situations, always muddling itself by a wilful yellow streak, spoiling all. It possesses the power of doing this, owing to the yellow tinge at the base of the pale pink breeder from which it breaks, and as a flamed flower it is worthless, through this not being cleared out. In this stand, as well as in others, *Bessie*, feathered bybloemen, was shown in perfect feathered character, a finely-formed flower, of delicate habit, requiring time and care to bloom it well; when in such character as that in which it was seen on this occasion, it was feathered with dark violet-brown; but time is indispensable to mature its white ground. As a flamed flower, it possesses but a poor character. *Commander* is a very fine heavily-feathered bizarre, of a deep rich yellow ground, with a massive feathering of almost black; a good flower, but often very difficult to get in good condition. It is also scarce. *Madame de St. Arnaud* was shown by Mr. Horner as a fine, bright, flamed rose, rich scarlet and white. It is a flower that can be depended on for good work. In the same stand of twelve was *Dr. Hardy*, a standard red-flamed bizarre, that in its strong and handsome class will hold a parallel place to that of George Lightbody among the green-edged auriculas. *Talisman* is a flower of similarly great power among the flamed bybloemens. The companion feathered rose in this stand was *Mabel*, otherwise known as Mrs. Lomax, and even as Charmer; for there is no discernible difference in flowers bearing these three names, and they are, probably, so many fine-feathered breaks from the same breeder in different hands. In the stand of twelve blooms shown by Mr. Thomas Haynes, Derby, there was a splendid flamed bloom of *Sir Joseph Paxton*, bizarre; this was selected as the best flamed flower in the show. His seedling feathered bybloemen, *Helena Mary*, is a very pure good flower in a difficult class, having a good white ground, with a heavy feather of violet-bronze. In this stand *Dr. Hardy* was well flamed, and old *Aglaia* very good; *Adonis* cleanly feathered, and, as often when so, dangerously near baldness round the petal-tops. In Mr. Barber's stand of twelve was *Martin's* 101, a feathered bybloemen, which is always a long eopped flower, but so correct and beautiful in its markings and purity as to be a strong pan-flower yet. Here was also a very richly-flowered strain of *Adonis*, nearly approaching to a flower of Mr. S. Barlow's named *Carbuncle*, broken probably from a fellow-seedling of *Adonis*. *Queen of England* was a very richly-flamed rose; and there was a well flamed bybloemen, with, it might be, some Talis-

men blood in it, named *Nepaulese Ambassador*. In Mr. Whittaker's cup-stand, *Masterpiece* was grand as a feathered bizarre, well deserving its name when feathered in this way, as an arrangement in black and yellow. *Mrs. Lea* was also cleverly feathered, a fine rose, and finer still perhaps in the flamed character, in which state this variety is not too apt to flush its feather with age.

In the Rev. F. D. Horner's winning pan of six, were *Barlow's Bion*, a rare and perfectly-feathered strain of a pure dark rose. This flower, like *Heroine* and other pure class-mates, possesses the great quality of opening pure white, and so being fit to show at once. *Mrs. Cooper* was here and in the following class as perfect as in the cup-pan of twelve varieties. In Mr. Haynes' pan, *Sulphur* was in fine feathered character, a strong flower. Mr. Barber had, in common with other exhibitors, *Duchess of Suiberland*, well flamed. This is a long-cupped byblömen, not known as a feathered flower, always boldly marked, and with all its faults of form indispensable to a collection yet. Mr. Barber also had a feathered byblömen seedling, somewhat after *Bessie* in general style, and that may break well out into a clear, long pencilled-feather. Mr. Yates showed a good-feathered byblömen marked "unknown," but for a shorter though better cup and less hcbacked petals, it might have been a good *Friar Tuck*.

In the class for three feathered, *Storer's No. 4* was a fine feathered flower, the best feathered bizarre of *Storer's*; rich, deep, yellow ground, and heavy, rich, dark brown feathering. In the way of flamed bizarres, *Orion*, a brother-flower to *Dr. Hardy*, with a more rounded cup, was richly flamed; and a flamed rose named *Lady Sefton* was a beautiful variety, with a touch of the purple of the well-known *Cereus speciosissimus* in its rich scarlet flame. Mr. Whittaker showed in several classes a flamed bizarre named *Prince of Wales*, a model for substance, cup, and level breadth of petal, well flamed, with a strong dash of the old *San Jo* colouring. *George Hayward* was shown among the feathered bizarres, a rich bold flower, heavily plated, but seldom seen in his massive feathering, being a very uncertain flower, running out into flame, and in that state seldom satisfactory. Noticeable in feathered bizarres was a bloom from the Rev. F. D. Horner of *Duke of Devonshire*, perfect in its colouring, and a surprise, as being a flower that had dropped out of sight and mind at the National Show.

MARKET PLANTS.—XIII.

ZONAL PELARGONIUMS.

IT is but attesting a truism when I state that Zonal Pelargoniums are largely grown for market purposes. A few weeks ago, I looked through the nurseries of Messrs. Hawkins and Bennett, at Twickenham, who are large growers of Zonal Pelargoniums for market, and in answer to my inquiries as to the numbers they cultivated, I was informed that on April 1st they had of *Vesuvius* 900 doz. in 48-pots, and 1,300 doz. in 60-pots, in all, 26,400 plants; of the *Madame Vaucher*, 800 doz. in 48-pots, and 900 doz. in 60-pots, in all, 20,400 plants; of *Princess Teck*, 400 doz. in 48-pots, and 300 doz. in 60-pots, in all, 8,400 plants; of *Christine*, 260 doz. in 48-pots, and 500 doz. in 60-pots, in all, 9,120 plants; and of the *Shah*, 600 doz.; in all, 7,200 plants. Every

year an enormous stock of this kind has to be worked up, which increases, rather than diminishes, as the years pass; and what a task it has been to multiply and grow on this quantity, in the face of such a winter and spring as that we have passed through, can be more readily imagined than described. Constant watchfulness and unremitting and unflagging pains have been exercised and put into operation to secure in the best condition these vast supplies. They are in fine condition, for no difficulties appear to be too great to be surmounted by those who make a speciality of market plants.

In addition to the varieties named, *Madame Lemoine* and *Marie Lemoine*, as also *Madame Thibaut*, are being tried as double pink-flowered varieties for cutting from for market; but they require what Mr. Hawkins terms a lot of heat in winter, and they need to be kept very dry. I may here remark that *Princess Teck* is a pink-flowered variety, that is a better doer, better flowerer, and a better keeper than the old *Christine*, which it will certainly replace—in fact, it will live where *Christine* will starve; like *Christine*, it has plain leaves. The *Shah* is a very fine rich orange-crimson flowered variety, large in the pip, bright in colour, and noble in the truss, which it is thought will make a good market variety, but it requires ten degrees more of heat in winter than *Vesuvius*. This last is the very best of market zonals; it is unrivalled for the many uses to which it can be put. *Madame Vaucher* still stands at the head of the whites for market purposes. Mr. Hawkins stated he had tried all of them, but none can stand by the side of his old favourite. Wonderful, the double form of *Vesuvius*, has been much grown, but it is giving place to *Vesta*, a new variety raised some years ago by Mr. Laxton. It does not do like *Vesuvius* for winter work, as it requires at least ten degrees more of heat to get its flowers to expand nicely.

During the winter months, cut flowers are taken from *Vesuvius*, *Madame Vaucher*, and *Princess Teck*. At the end of February, the tallest are cut down to within three inches of the pot, and when they begin to break are turned out of the pots, the roots reduced, and repotted into 48-pots, in a good, free, and rather sandy loam and dung, and grown on for marketing in spring and early summer. The wood thus obtained is very useful to make cuttings from, though all growers of Pelargoniums admit that the harder and the riper the wood, the better and the more quickly do they root and grow into plants. A very large number of cuttings are also taken during the summer months, and these are put into store-pots, shifted into 60-pots, and then got on to 48-pots, in the usual course.

The great success which attends the culture





Plums:
1, Belle de Louvain 2, Brouillon

C. G. B. P. 1894

of Zonal Pelargoniums at Twickenham depends in a great measure on the thorough system observed. The plants may be said to be brought forward in five large batches. They are kept well watered and thoroughly cleaned out, and about once a week each plant is turned round, so that it may not become drawn on one side. A good plant fit for market has five expanded trusses of bloom, with others laden with buds. As they grow on, and become fit for market, they are gradually passed through the houses till they reach what is known as the finishing-house. This house, which contains an enormous quantity of plants, is a sight long to be remembered; it is 200 feet in length by 18 in width, and has a stage of twelve shelves at the back, with a commodious level stage along the front.—R. DEAN, *Ealing*.

MANIPULATION OF AURICULAS AND POLYANTHUSES.



ON page 90 of the *FLORIST AND POMOLOGIST*, Mr. R. Dean writes:—"Exile was very fine, pure in colour, and flat and well-formed in pip; a little manipulation had something to do with this, in all probability." This reference to manipulation leads me naturally to the question—an answer to which, I think, would be interesting to many young growers—as to how far the practice is admissible with the Auricula. As regards the Polyanthus, there may be no objection to the use of artificial means for flattening the pips, but with the Auricula the glory and charm of its powdered meal is destroyed by any attempt at handling, and the effect of pressure to obtain flatness means utter ruin to a Grey or White-edged flower. At the National Auricula Show at Manchester on April 29, I noticed some specimens of Headly's George Lightbody, which were marvels of flatness, but with a wretchedly dull, ironed look about them, the meal crushed down into the substance of the flower, having the appearance of a half-washed shirt-front from the hands of an untidy laundress, that was particularly unpleasant to look upon. In fact, the life and sparkling brilliance of this glorious flower were completely pressed out of it. I am quite of opinion that the resorting to artificial means for dressing florist flowers, where the natural beauties of the flowers are improved and set-off by the practice (such as the dressing of Carnations, &c.), is perfectly

legitimate and desirable; but with the Auricula, the case is very different. Nature seems to have placed it in the front rank as a perfect flower in itself—plant and bloom may no more be separated than may man and wife—they form one. As Mr. Horner has so happily expressed it, "the Auricula puts on its best dress in the spring to grace the bloom, hence it is never shown as a cut flower." It may be said to represent the Fine Arts in the flower way, and one should as soon think of using a scrubbing-brush to his delicate water-colour drawings as to resort to manipulation with the "jewelry" of his Auricula blooms. Therefore, as Nature has raised the barrier, "Touch me not, or you spoil me," I venture to think that any attempt to obtain one property, flatness, at the expense of another, purity, is not only folly, but should come within the clause in the exhibition schedule,—“Any attempt at deception shall disqualify the flower for competition.”

I have no desire whatever to wound the susceptibilities of any one in making these remarks, but write in the hope that they may elicit some information from some of our leading growers that will be useful and instructive to us all.—T. L. C., *Birkenhead*.

CHOICE PLUMS.

[PLATE 494.]

FEW of the domestic fruits are of so much service to the community as the Plum. It produces one of the most wholesome and delicious preserves, which improves with keeping, and when cooked fresh from the tree, is always popular. In parts of Germany the plum forms almost the staple food of the country, and in the *Bubbles from the Brunnens of Nassau*, a graphic word-picture is drawn of the lean German tailor devouring his delightful and invigorating repast of stewed plums.

The *BELLE DE LOUVAIN*, of which a figure (1) is here given, was received from Belgium many years since, but except from the fact that its name indicates its birth-place, I cannot find that it has any particular history. It is well named "Belle de Louvain"—albeit that Louvain abounds more with priests than belles, and the two are hardly compatible. The tree

is hardy, forms a handsome pyramid, and produces very large crops, the first being very handsome and excellent, either cooked or uncooked. It no doubt belongs to the numerous race of Red Magnum Bonum Plums, but it ripens earlier than the old sort, preceding the Victoria, which it rivals in fertility. The fruit hangs firmly to the branch, and is not easily shaken off.

BOULOUF (Fig. 2) is a very valuable plum. It has been here for many years, under the name of Reine Claude de Jodoigne, and was received from a Belgian nursery. In the *Fruit Manual* of Dr. Hogg, Reine Claude de Jodoigne is described as a greengage, and Boulouf as a cooking plum. The Boulouf which is figured, and which I think to be correct, agrees with the description given in the *Journal of the Société Van Mons*, vol. i., p. 298:—Fruit large, round, dark purplish-red; flesh yellow, juicy, and perfumed, of the highest quality; ripening at the end of September. In addition to these excellent qualities, the tree is a robust grower, but very dwarf in habit, and therefore eminently adapted for garden-culture. Last year, 1878, the plum ripened the last week in September, and was certainly delicious, having all the sprightliness of the Purple Gage.—T. FRANCIS RIVERS, *Sacbridgeworth*.

CULTURE OF WALL-FRUITS.

XVIII.—THE APRICOT, &c. (*continued*.)

NOTWITHSTANDING the beneficial influence which the pinching-back of the summer growth is calculated to exercise in maintaining a proper balance of strength in the wood, and inducing a free-flowering habit, I am well convinced that in the case of Apricots trained on walls the system is liable to be carried too far, to the exclusion of a practice which appears to me to agree better with the experiences of late years. I allude to the system of spur-pruning, under the belief that more importance has been ascribed to it than the practice really deserves. There is no doubt that by it a great abundance of flowering spurs can be produced, but the question is,—In how many of our ordinary seasons do such spurs carry fruit? I will take the experience of the present year as an example. The trees bloomed enormously, both spurs and young trained wood

being very full, and there is a fair sprinkling of fruit, the best being on the young shoots trained close in, but only on those spurs which *touch the wall* is there any fruit swelling off; and although fruit set on the projecting spurs, so as to be easily distinguished, it all fell off abortive. I have observed this to be the case in many previous seasons, but the fact was never more marked than in the present. This tendency has been frequently noticed in the periodical literature of the day, by writers who, when remarking on various fruit-crops, imply that there are no Apricots, except close to the wall.

I conclude from all this that, in the absence of any method of protection on open walls, which can ensure an equable temperature, we can only calculate on a crop of fruit from projecting spurs in exceptionally fine seasons; and as these are few and far between, I would suggest the propriety of taking these facts into consideration both at the summer and winter pruning, and determining that wherever spurs are retained they should only be such as are close to the wall, and that all foreright and ill-placed shoots should be removed entirely, not all at once, but during the several manipulations to which the trees are subjected through the season. And in order to supply the necessary amount of foliage, to ensure the perfect maturation of the wood and fruit, and also partial shelter for both, I would urge that more attention should be paid to the training-in of young shoots their whole length, and that spur-pruning, although not absolutely rejected, should yet become a secondary consideration, in fact, subordinate to the encouragement of young wood, so as, in some degree, to assimilate the general treatment as to training and manipulation to that recommended for the Peach on the open walls. Natural spurs, however, should always be retained in any case. I allude to those small groups of flower-buds which are often produced close to the stems of the older branches, and are not the results of stopping the young wood. Some sorts, and notably the old Moorpark, for one, are especially given to the production of these natural spurs, which often set fine clusters of fruit. The Kaisha is another sort having a like tendency; from one such spur, I recently removed eleven fruits, leaving two.

Bearing in mind the above somewhat correlative remarks, I will resume the general thread of the subject by referring to the considerations which should influence practice at the final pruning and training-out for the next season. I have recommended the painting of the walls, and also the wood; and I repeat that these are wise precautions, and save much after-trouble. Previous to painting over the wood, I should have advised the necessary pruning, because the appearance of the wood after the fall of the leaf is a great guide to the practical pruner.

Those who take a general interest in the trees, and watch their progress with a practised eye, may often perceive a few weeks previous to the fall of the leaf a tendency in certain branches to indicate incipient debility by a weakly growth, and a certain flagged and hang-down appearance in the foliage. This is the usual forerunner of the dying-away of the branches in the spring. When the sap is on the move, they make a feeble effort, throw out a few small leaves, and then collapse and die. The causes of this are still wrapped in mystery; but I have known it to follow after excessive fruit-bearing, and also where the necessary manipulations through the growing season have not been sufficiently gradual, and too much has been removed at one operation; the abundant flow of the sap has been thereby checked, and obstructed, causing gumming, and sowing the seeds of future debility. Another great outlying cause is the deficiency of the water supply during the swelling of the fruit previous to ripening, and again after the fruit is gathered, at which time the borders should be well saturated, which will plump up the buds, and cause the wood to look fresh and bright.

In the final pruning, therefore, previous to painting, look well, in the first place, to see that the wood has this appearance of plumpness and health, and remove at once any of a debilitated and doubtful appearance. Then look to the condition of the tree, as to its being evenly furnished; and if overcrowded in any part, let it be judiciously thinned-out there. The practice above advised, to train-in plenty of the young shoots, will leave a very useful margin to enable the operator to bring up young healthy wood in any needful

direction, and also to make provision for prospective vacancies, by leaving as much young wood as possible low down in the centre of the tree as a reserve, even at the risk of a little crowding. The trees may then be carefully trained out equally all over the surface, using as few nails and shreds as is consistent with security, and allowing supreme symmetrical training to be subordinate to the general welfare of the tree. The great object is the production of fair crops of fruit, and not the culture of stiff straight branches, trained out to please the eye.—JOHN COX, *Redleaf*.

VILLA GARDENING.

July.

JULY is the great month of promise, when the trees that awhile ago were bright with lovely flowers begin to bow down with fruit, when, "like a green sea, upheaves the swelling corn," and a thousand natural charms ravish the sight. It is the time of year when the gardener reaps something of the harvest he has worked to possess, and when the full flush of summer gilds hill and dale, and sends abroad its glory over the face of Nature.

Greenhouse.—This part of the garden should now be gay with flowering plants, such as *Fuchsias*, *Pelargoniums*, *Mimulus*, late *Azaleas*, *Calceolarias*, *Gloxinias*, and other things of a similar character. We find that *Saxifraga nepalensis*, *Harrison's Musk*, and *Cereus flagelliformis* are useful things at this season of the year. These plants require a good deal of attention, in the way of watering, during drying weather; decaying leaves and dying flowers should also be removed. The cleanliness of every part of the house, as well as the plants, should be looked to, and they should be kept clear of insects. Plenty of air should be given, by night as well as by day; and when the sun shines out hot, accompanied with drying breezes, water freely; syringe and damp the floor of the house, to keep up the humidity of the atmosphere. Some shading should be given, during the hottest part of the day; but if this cannot be done, and there is difficulty in attending to the watering throughout the day, it will be as well to paint over the roof with summer-cloud, or a wash made up of lime, prussian blue, and a little size to make it adhere. A little liquid manure should be given to free-growing plants that are at all pot-bound; and if liquid manure is not attainable, a small bag of soot should be immersed in a tub of water, and the plants watered with this. *Azaleas* kept in the greenhouse may have a little more sun to ripen the buds, and about the end of the month, the

early blooming *Azaleas* which have been excited will require moving, after being gradually hardened, to a suitable place under a north wall. *Epacris* and kindred plants that flowered early, and are now getting forward in growth, should be looked to, and the young growths tied-in, before they get deformed by hanging about from their own weight. Any young plants occupying a frame, and to be grown into specimen plants for the greenhouse, will require attention as to ventilation, shading, and watering. Any large specimens that have been placed in the open air in a shady position may require shifting; this should be seen to without delay, taking care the soil forming the ball of the plant is moistened through before potting; after potting, defer watering for a few days, but syringe the foliage frequently when the weather is warm and drying, and keep the ground on which the plants are standing moist also. Some seed of *Primula sinensis fimbriata*, *Calceolaria*, and *Cineraria* should be sown at once, making use of well-drained pans or pots, and a light sandy soil, as free as possible. The great thing is to keep the pots of seed moist and cool, and the young plants soon put in an appearance. It is well to make two or three sowings of *Primulas* for succession,—say, in April, June, and July. Many gardeners sow their *Primula* seed too late, and the plants do not get into good size by winter, and are more difficult to keep over.

Cold Frames.—*Chrysanthemums* should have plenty of air and water now; if they are in the frame, the lights should be taken off, so that the rain can fall freely on them. They should be shifted into the blooming-pots without delay. Plants that have gone out of flower, and are still kept in pots, such as *Primroses*, *Polyanthuses*, hardy *Primulas*, as *denticulata*, *purpurea*, *intermedia*, *nivalis*; *Hyacinths*, *Jonquils*, *Narcissus*, &c., may be similarly exposed. The rain will do them no harm, and there is a danger of their being neglected and injured for want of water. They should be kept clear of weeds, and decaying leaves removed. As far as possible, all things that it is not necessary to keep in pots during the summer should be planted out in a prepared bed; they do better, and save a great deal of labour in the way of watering, &c. The cold frame comes in very handy at this season of the year for housing any quick-growing greenhouse plants that are wanted for succession. If they are all placed in the green-house, they, being subject to the same influences, come into flower together. In the cold frame they can be kept cooler and moister, and shaded from the sun, and are much slower in reaching the flowering stage.

Flower Garden.—The weather has been much against outdoor work, but the plants are making a rapid growth, and the aim of the gardener should be to get the beds covered as

soon as possible. This remark applies specially to creeping plants and such as need pegging; as *Phlox Drummondii*, *Verbenas*, &c. *Clematisses*, *Climbing Roses*, *Eccremocarpus scaber*; and all wall and pillar plants need to be kept neatly tied or nailed, especially *Clematisses*, otherwise the shoots run together, and become a tangled mass. *Hollyhocks*, *Dahlias*, and all quick-growing plants making a full growth, need to be properly staked, and kept tied to their supports. *Wallflowers*, *Canterbury Bells*, *Sweet Williams*, *Foxgloves*, *Stocks*, and other biennials, should be planted out for blooming, taking care to give them something good to grow in. *Double Daisies*, *Double Primroses*, *Pansies*, *Violas*, &c., that have been employed in the spring beds should be divided and planted out, to make stock for another year. Grass-plots need to be kept mown and well rolled; the tidier and neater a garden is kept, the more pleasing are all its plants.

Kitchen Garden.—*Broccoli*, *Cabbage*, *Cauliflower*, &c., should be planted out as space offers, and the last crop of *Celery* plants should be put in their trenches as soon as possible. That planted out early will soon be ready for earthing-up. Some gardeners, preparatory to earthing-up, take off any side-shoots, and give the plants a good soaking with liquid manure. *Scarlet Runner Beans* that have got a good start are growing rapidly, and if they become too tall for the sticks, may be pinched back. It is an old practice to top *Long-pod* and *Broad Beans* as soon as the lower blossoms drop off. *Vegetable Marrows* and *Ridge Cucumbers* should go out without delay. *Lettuce*, *Radishes*, *Turnips*, and *Spinage* should be sown for succession, and a little *Early Cabbage* at the end of the month, to come in for use in early spring.

Fruit Garden.—*Peach* and *Nectarine* trees now require attention. The strong sappy shoots should be cut out, as they are useless for fruiting; they rob the blooming-wood, and spoil the shape of the trees. It is best to nail-in all shoots left for fruiting another season. The blister is prevalent this season, and it is best to pick off all the leaves so affected, and well syringe the trees, to keep them clean and healthy. *Vines* growing in the open air should have the lateral shoots broken off, and the main shoots allowed to grow, till they have filled the space of wall allotted to them. The berries should be thinned as soon as large enough. *Tomatos* should be kept nailed to walls, and fastened to the fences against which they are growing. Old *Strawberry*-beds should be removed as soon as the fruit is gathered. It is a good plan to thoroughly trench the ground, burying the old plants at the bottom of the trench. There is therefore no lack of work in all departments of the garden.—SUBURBANUS.



CRINUM BRACTEATUM
PURPURASCENS.

THIS fine *Crinum* was exhibited by Messrs. Veitch and Sons, of Chelsea—whose woodcut we here reproduce—at South Kensington in April last, where it was awarded a First-class Certificate. Like all its race, it possesses qualities which render it a desirable introduction in a stove collection, for it groups well with other plants, even when not in blossom, while its flowers are of a singularly distinct and striking character. It is a bulbous plant, easily grown, if planted in rich loamy soil, and freely watered in its growing and flowering seasons. It appears to be a native of West Africa, and was introduced by the Messrs. Veitch, through their collector, Mr. Kalbreyer. They describe its inflorescence thus:—

“The scape is rather slender, from 9 in. to 12 in. high, and light purple, supporting an umbel of from six to nine flowers, with purple

foot-stalks 3 in. to 4 in. long. The perianth segments are spreading, lanceolate-acuminate in form, white faintly tinged with rose. The filaments, conspicuous organs in this genus, are of a purplish-crimson, terminating in oblong bright yellow anthers. It is well distinguished by the peculiar, but very pleasing colour of its striking flowers.”

Now that Amaryllidaceous plants are once again rising in popular estimation, we are glad to welcome new arrivals amongst the *Crinums*, since they possess many desirable qualities.—
T. MOORE.

GARDEN GOSSIP.

THE two most important of the GREAT SUMMER EXHIBITIONS were those of the Royal Horticultural Society (May 27th-30th), and of the Royal Botanical and Horticultural Society of Manchester (May 30th to June 6th), the latter including the show of the National Tulip Society, reported at page 102. The show at South Kensington formed a magnificent display, such as has seldom, if ever, been brought together in London

since the famous International Horticultural Exhibition of 1866. It was a flower show in every sense of the word, the fine-foliaged plants which of late years have almost entirely monopolised the show-tents being more restricted in numbers, while the grass-covered slopes and terraces under the large marquee were clothed with a brilliant display of Flora's brightest ornaments, arranged in the happiest manner possible by Mr. Barron. The most striking feature was undoubtedly the wonderful display of Pot Roses contributed by Messrs. Paul and Son, of Cheshunt, and Mr. Turner, of Slough; and the extraordinary collection of Clematises sent from Woking by Messrs. George Jackman and Son. Next to these should probably be placed a large group of fine-foliaged and flowering plants, arranged for effect by Mr. John Wills, and arranged, too, in a manner so simple, elegant, and effective as to win additional credit even for Mr. Wills, who surpassed himself on this occasion. As an exceedingly chaste and novel combination of flowers and foliage, we may also name the group of Roses and Japanese Acers, set up by Messrs. Veitch and Sons, which were so happily blended together as to produce a perfectly unique effect of the most pleasing character.—The Whitsuntide show of the Manchester Society, which has become one of the chief horticultural events of the year, despite the concurrent attraction of a rival exhibition in London, was not in any appreciable degree shorn of its usual grandeur, or sensibly curtailed in its proportions. It may be specially noted as remarkable for the very fine display of stove and greenhouse plants, the merit throughout this class of subjects having never before, as we think, ranged at so uniformly high a standard. Another remarkable feature consisted of Mr. Turner's Pot Roses, which, notwithstanding the giants displayed in the tents of South Kensington, were of a very high order of merit. Throughout the show, moreover, there was a manifest reduction in the number of the coarser-looking foliage plants, and a corresponding increase in the number of flowering subjects, the consequence of which was that a much brighter and more cheerful aspect pervaded the whole scene. There was a falling-off in the number of exhibits amongst the Orchids, through the defection of one or two leading exhibitors, but the reduction in bulk was met by a greater amount of variety, and the empty space was well filled by noble plants from the collection of Mr. W. Turner, a son of the late noted Orchidophilist of Pendlebury, the display altogether being abundant, and the quality exceedingly good.—The Rhododendron Shows from the Surrey nurseries—Mr. A. Waterer's, at the Regent's Park, and Messrs. J. Waterer and Sons', at Chelsea—have been good of their kind, notwithstanding that the late severe winter had left its mark on many of the flower-trusses of the tenderer sorts.

— THE AMERICAN POMOLOGICAL SOCIETY will hold its seventeenth session at Rochester, New York, on September 17, and three following days. All persons interested in the cultivation of fruits are invited to be present and take seats in the convention. The meetings will be held in the Council-chamber of the city of Rochester, and the exhibition of fruits will be held in the grounds of the Western New York Agricultural Society. Several gentlemen have been invited to prepare papers for the session; amongst others, Prof. W. J. Beal, on "Distinguishing Varieties of Apples by the Flowers;" W. Saunders, Esq., on "Experiments in Fruit-culture;" J. Bush, Esq., on "Grape-rot in America;" and Mr. T. Meehan, on "The Sexes of Flowers in Relation to the Fruitfulness of Orchards and New Varieties."

It is earnestly hoped that there will be a full attendance of delegates from all quarters, thereby stimulating more extensive cultivation by the concentrated information and experience of cultivators, and aiding the Society in perfecting its catalogue of fruits.

— OF ASPARAGUS CULTURE, the *Gardener's Magazine* points out that nine times in every ten everywhere, in large and small gardens alike, the plant is treated as though light and air were of little value to it. It is not enough to ensure sufficient space in the first planting, but to take care to avoid a cause of ultimate crowding, that the most careful cultivators are apt to neglect. It is very simple and very natural, this unobserved mischief. The plant sheds abundance of seeds, and the beds soon bristle with self-sown plants, and these are allowed to remain, instead of being ruthlessly pulled out. Thus many thousands of well-made and possibly profitable asparagus-beds prove to be worthless, and a mere vexation to all concerned. Young gardeners, in particular, need to lay firm hold of the fact that "weeding" includes thinning, although in our calendars we may not often say so. Young asparagus plants that appear in an asparagus-bed already well furnished are weeds and usurpers, and should be removed as ruthlessly as any other weeds, no matter what their names may be.

— THE CROTON FENZII, recently offered in commerce by M. Salviati, of Florence, is described as a jewel among the Crotons. It is the result of a cross effected, in the greenhouses of Sesto, between C. Veitchii and C. Weismanni, and has moderate-sized oval acuminate leaves, richly veined with golden-yellow, the principal nerves being purplish-red, which colour extends to the stem and the petiole. The habit is so dwarf and compact that plants only a foot high are often seen in all their splendour, the yellow streaking then extending to almost the whole surface of the leaf, and the red nerves shining on the yellow ground. It is a variety especially fitted for the decoration of small greenhouses, as it requires very little room to be able to develope all its charms. This variety has been dedicated to the Chevalier E. O. Fenzi, president of the Royal Horticultural Society of Tuscany.

— A NEW VARIEGATED MYOSOTIS (*M. dissitiflora*?) has, says the *Irish Farmer's Gazette*, been raised in the garden of Mr. Percy and Lady Annette La Touche, at Newberry, in Kildare. It has maintained its character for two years, and has been extensively propagated, both by cuttings and division of the roots, so as to have been used largely as an effective indoor decorative plant, and for bedding purposes in the flower garden. "The bold and elegant variegation of the leaves, the bright blue, with small yellow eye, of the flowers, the particularly neat and compact habit of the plant, and the facility with which it may be multiplied, combine to render it particularly suitable for bedding purposes." The plant was shown at one of the meetings of the Royal Horticultural Society of Ireland, and had a certificate and the Society's bronze medal awarded to it.

— TWO HARDY SHRUBBY PLANTS of the Central Nevada region, writes Prof. Sargent, in the *American Journal of Science and Art*, may be mentioned which, from their beauty, are especially worthy of introduction to cultivation. (1.) *Cowania mexicana*, a large rosaceous shrub, nearly allied to *Cercocarpus*, with elegant pinnatifidly-lobed leaves,

and large and very abundant yellow flowers; and (2) a large shrubby *Spiraea*, *S. millefolium*, with the foliage of *Chamaebatia*, but a larger and more striking plant, and perhaps the most elegant of the genus.

— A SUPERIOR Cherry, comparatively little known, called the EBENTER CHERRY, is, according to the *Journal of Horticulture*, cultivated on the shores of the Lake of Constance, notably at Lindau, Tettnang, &c. It is distinguished for its firm flesh, large size, and small stone, and is further noted for its superior travelling qualities. Being a late bloomer, a plentiful crop is invariably obtained, and as it ripens after all other table cherries are over, it is esteemed quite an acquisition.

— MR. W. B. FREEMAN, well known as a plant collector in India, writes, regarding the NATURAL HABITATS OF THE ANECTOCHILI, that he has found them at an elevation of from 3,000 to 4,000 ft. above the sea-level, and most frequently in ravines near mountain streams. Though the temperature must fall much below freezing in winter, the plants are never exposed to the direct influence of frost, being sheltered by trees. The maximum temperature probably never exceeds 70° Fahr., and this can only be for an hour or so in the day. They grow freely in a temperature of 65°, and rot off very quickly if any decayed vegetable matter or mildew is allowed to accumulate about the stem. They should never be allowed to dry up, though free drainage is undoubtedly essential. The soil in which they are found growing is a combination of peat and vegetable mould.

— THE following is an ECONOMICAL PLAN of CUTTING CAULIFLOWERS, which Mrs. Stephens sends us from Huish's *Alphabetical Receipt-Book*, and which she recommends where there is a large family, as she has for years proved its usefulness:—"The most economical plan of cutting cauliflowers is, instead of cutting off the whole head of a cauliflower, to leave a part on, and all the leaves, folding them over. By this method second and even third heads will be formed, and thus they may be eaten for two or three months; whereas at present, by cutting the head completely off, the bed of cauliflowers is exhausted in two or three weeks." She leaves a little branch on two sides, as large as a small egg, and thus has many times had two and even three cuttings from one plant.

— A SAMPLE of the Japanese OIL OF PERILLA OCIMOIDES, an oil obtained from the seeds of the plant, was exhibited at a recent meeting of the Horticultural Society of Berlin. The Comte de Castillon (*Rev. Hort.*, 1878, 455) states that it is called Ye-Goma, and is employed in various ways, namely, in the proportion of ten per cent., to facilitate the extraction of the wax of *Rhus vernicifera* and *R. succedanea*; also to render coats and umbrellas water-tight, and in the manufacture of the celebrated Japanese leather paper. What appears to be the same article is, according to Mr. Davenport, used by the Manchurians, under the name of Hemp-seed oil, for painting boats, ships, &c.

— THE DAPHNE JAPONICA VARIEGATA is an evergreen sweet-scented flowering shrub, which, though old, ought to be more extensively

grown. It is hardy, or very nearly so, since we learn that a bush of it some 3 ft. high and nearly as much across, stood out for many winters, until removed to make way for alterations, at the Great Berkhamsted Nurseries, where it used to scent the whole quarter on which it stood. It is a remarkably free bloomer, hundreds of young plants there in the cold pits being in full blossom, and not more than 2 in. or 3 in. in height. It has, as is known, something of the aspect of *D. indica* or *D. odora*, but appears to be hardier than these. The flowers are tinted with a flush of pale purple, and deliciously scented, and though perhaps scarcely to be called showy, are very pleasing in appearance.

— THE SALVIA SPLENDENS BRUANTI is a much improved variety of this brilliant sage. It was raised in France, and has during the past autumn been flowering freely in Mr. Cannell's nursery at Swanley. It is of dwarfer and more compact habit than the type, and the leaves are quite different, being deeply serrated on the edges, whilst the flowers, which are produced in large and abundant trusses, are larger than those of the common kind, and equally gorgeous in colour.

— ATTENTION has been invited to a NEW WEEPING WILLOW (*Salix rigida pendula*), by Dr. Carl Bolle, in the *Berliner Monatsschrift*. He describes it as a noble and handsome novelty, and a valuable addition to the Weeping Willows now grown. It was accidentally discovered amongst a number of cuttings of typical *S. rigida*, creeping along on the ground, instead of growing erect, and the happy finder, Mr. Joseph Wrede, lost no time in grafting it on stems of *Salix pyramidalis*. This happened four or five years ago, and the results have exceeded expectations, the new Weeping Willow being only of moderately strong growth, and therefore suitable for small gardens.

— THE new CHIONODOXA LUCILÆ is one of the most charming of our hardy spring-flowering bulbs. It was introduced by Mr. Maw from Asia Minor, and surpasses any of the squills, being also apparently as hardy and as easy to increase as *Scilla sibirica*. The colour is a bright sky-blue, fading to white in the centre of the flowers, which are about two inches in diameter, five or six in number, and thrown well up to the sun. The foliage is very like that of *Scilla bifolia*.

— THE NEW TEA ROSE, DUKE OF CON-NAUGHT, is one of the acquisitions of Mr. H. Bennett, Stapleford Nursery, Salisbury. Cut blooms which we have seen prove it a gem of the first water, a full-sized, showy flower, of a rich crimson, the colour almost equalling in intensity that of the old crimson China, and the flowers having a most delicious scent. Another flower, named Purple King, is not only very promising, but very fragrant.

— THE *Journal of Horticulture* recommends the following plan for PROTECTING YOUNG CABBAGE-PLANTS, and allied subjects, in gardens where snails are plentiful. The plan was adopted at Drumlanrig many years ago. Some hundreds of 8-in. pots without bottoms were kept in stock, and when a fresh plantation of greens of any kind was made, one of these pots was placed over each plant.

This was kept on until the plants were strong in the stem, and the leaves well above the rim of the pot. As a successional lot was generally planted by about this time, the pots were shifted on to the small plants. Besides keeping all snails out, this plan afforded excellent protection to the young plants early in spring or in severe weather, and on this account alone it is worthy of notice. A substitute, consisting of round bands of thin ash-wood, 6 in. in diameter by 6 in. deep, placed over the young plants in the same way as the pots, has been found to answer admirably.

— A NEW bright-looking GOLDEN-LEAVED SELAGINELLA has been exhibited from Chiswick by Mr. Barron. It is a neat-growing, distinct, golden-yellow variegated form, and cannot fail to become a very popular plant, as it remains quite constant. It was sent to Chiswick by Mr. DONALDSON, gardener to the Earl of Kintore, Keith Hall, Aberdeenshire, by whom it was raised.

— THE INFLUENCE OF THE STOCK ON THE SCION has often engaged the attention of horticulturists. Some few years ago Mr. Barron carried out and reported on some experiments at Chiswick, with a view to glean further information on this interesting and important question, and in furtherance of this object obtained samples of the various stocks in use from the most trustworthy sources. A certain number of stocks of each kind were allowed to grow without let or hindrance, and the others were grafted with the Blenheim Orange, it being desirable to know what effect the different stocks would have on the same variety of Apple. At the present time the results of the experiment are very clearly apparent.

— WE have received from Mr. W. B. Latham, of the Birmingham Botanic Gardens, specimens of *LASTREA MARGINALIS*, VAR. *CRISTATA*, a handsome new hardy Fern of great beauty. This cristate variety of the North-American *Lastrea marginalis* was, he reports, received from Canada a few years since, and has proved constant under cultivation. The fronds are very neatly crested at the tip of each of the pinnæ, while the apex of the frond is doubly forked, as well as crested; altogether, the variety is one well worth growing.

Obituary.

— PROFESSOR KARL HENRI ÉMILE KOCH died on May 25th, in his 70th year. He was, till recently, Professor of Botany in the University of Berlin, and was more especially connected with horticultural botany. His genial manners, no less than his scientific reputation, secured him a welcome at the various botanical and horticultural congresses, most of which he attended as an official delegate from the German Government. In this way Professor Koch became to horticulturists perhaps the best known botanist of the Continent. His early travels in the Caucasus, Persia, Asia Minor, &c., and his numerous publications on garden botany, pomology, and arboriculture, rendered him a leading authority on these subjects. For many years he edited the *Wochenschrift für Gärtnerie und Pflanzenkunde*, and his *Dendrologie* is in all respects a classical work.

— DR. DAVID MOORE, Director of the Botanic Garden, at Glasnevin, Dublin, died there on June 9th, from the effects of diabetes.

For the long period of forty years he was at the head of the Botanic Garden of the Royal Dublin Society, which he raised from a comparatively humble condition to be one of the first establishments of the kind in the United Kingdom, the Glasnevin Garden being excelled only by that at Kew, and equalled by only one other public garden, that of Edinburgh. He was a native of Dundee, and commenced the study of horticulture in the gardens at Camperdown and the nurseries at Comely Bank, and that of botany under the late Dr. Mackay, then Curator of the College Botanical Garden, whose place his eldest son, Mr. F. W. Moore, now fills. He was for five years employed on the Geological Survey of Ireland, before he was appointed to Glasnevin. Among his chief works were *Notices of British Grasses*, *Irish Hepaticæ*, *Irish Mosses*, and *Cybele Hibernica*, of which latter he was joint author with Mr. A. G. More, F.R.S., M.R.I.A. He was a thoroughly practical botanist and horticulturist, and one of the most simple-minded and generous-hearted of men.

— HENRY NOEL HUMPHREYS, Esq., died somewhat suddenly on June 9th, at the age of 71. He was born in Birmingham, and became an artist of no mean fame and a naturalist of no uncertain repute. He is best known to naturalists by his works on *British Butterflies* and *British Moths*, undertaken in association with Professor Westwood, and to horticulturists by his illustrations to various works on bulbs, annuals, &c., brought out by Mrs. London. Quite recently, he contributed some characteristic drawings of plants to the pages of the *Garden*.

— REV. CANON BEADON died at North Stoneham, near Southampton, on June 10th. He was born in London in December, 1777, and was consequently in the 102nd year of his age. He graduated at Trinity College, Oxford, in the first year of the present century, and in 1811 became vicar of Tetley, and was in the same year presented to the rectory of North Stoneham, in succession to his father, which he held ever since—a period of 68 years. In 1812 he was made a canon of Wells Cathedral. Mr. Beadon had a thorough love for horticultural pursuits. Indeed, North Stoneham Rectory has been for a long time one of the landmarks of gardening in the South, and the name of Canon Beadon will be long remembered in connection with it.

— M. SPACH died in Paris on May 18th, in his 79th year. He literally died at his post, in the herbarium of the Jardin des Plantes, with which establishment he had been connected for nearly half a century. He is best known in this country by his descriptions of flowering plants in the *Suites à Buffon*.

— M. ÉMILE RODEMBOURG, head gardener at the Botanic Garden of the Liège University, died recently, from a malady which had long preyed on him. He was one of the first pupils started from the *École d'Horticulture* of Ghent, and he did honour to that establishment, so far as work was allowed to him; but unfortunately his very bad health has prevented him from accomplishing all that was desirable.




W. H. Fitch, del.

Chromo. Strook & Co. Ghent

Hibiscus syriacus - Celeste

HIBISCUS SYRIACUS CÆLESTIS.

[PLATE 495.]

 OUR gardens contain, perhaps, no hardy flowering shrubs—certainly none of the deciduous section—which are more strikingly beautiful than the different varieties of *Althæa-frutex*, the *Hibiscus syriacus* of botanists. They are perfectly hardy, they are very floriferous, they run into numerous well-marked varieties, and their flowers are in all cases exceptionally showy, so that there are few subjects that can be more safely recommended to the planter, and that may be more satisfactorily introduced to prominent positions in the shrubbery borders. We have said that they run into numerous varieties, and we find in the catalogue of MM. Simon-Louis upwards of thirty recorded by name, many of them being double-flowered; while M. Lavallée, in the *Arboretum Segrezianum* remarks that the garden varieties are many.


Beautiful as are the old familiar sorts—that, for example, with white flowers, having a deep purple-crimson eye—they are eclipsed by the charming variety we now figure, and which is very faithfully rendered in the accompanying plate. We have seen it blooming during the past year or two in the nursery of Mr. A. Waterer, at Knap Hill, and have always found it most strikingly attractive; the colour, which

sets off the richly-coloured eye to much advantage, being one which is generally admired. It is called *Céleste*, or in the latinised form *cælestis*. It forms a free-growing plant, in habit and foliage resembling the other cultivated forms, and is remarkably free in producing its flowers. These are large and well-expanded, of a beautiful cœrulean blue, the purple-crimson eye remarkably rich, and radiating outwards towards the margin. Everybody who has a place for a choice hardy flowering shrub should plant this, and those who do so will not be disappointed.

Another very fine variety which we have also noticed at Mr. Waterer's, is the *H. syriacus totus albus*, a pure white flower, and perhaps the most floriferous of all, the branches being thickly studded throughout their whole length, by the very distinct looking flowers, which are attractive from their unblemished whiteness. Young dwarf plants flower copiously, and would no doubt form useful subjects for being gently forced into bloom in spring for conservatory decoration.

The two varieties here noticed are comparatively novel, or at least little known in this country, but they both deserve to be widely and extensively cultivated.—T. MOORE.

“MANIPULATION” OF AURICULA BLOOMS.

 O the guileless florist, innocent of vile deceptions in the exhibition of his flowers, it is amusing to have occasional proof of the belief being still alive that “painting the lily” is a fact in his department of floriculture. Some one who thought painting on velvet might be an art as well with a natural as with an artificial tissue, wrote to ask me if it were true that my Auriculas were painted! Is it worth while to add to a smiling denial, the gentle assurance that there would not be a remnant of honour, worth, and pleasure left to a true florist in flowers treated so? But there is nothing dishonest in the careful training of a flower of a plant, any more than there is in the skilful training of the plant itself.

It is surely expected that what is of high merit in floral competitions has received much


more than common care to bring it to such excellence of growth and bloom. We admit that even with the same variety of a plant, we are not likely to match the gains of the thorough cultivator without his pains. His skill is based on the sure foundation of attention, knowledge, and love; and there will be many thoughtful and ingenious little details included in the pains he takes, which would not occur to a beginner, nor by an idle man be thought worth his trouble.

In the Auricula, perfect flatness of the pip is a very high quality, but unquestionably it should never be obtained, as “T. C. L.” complains of, at the expense of the integrity and beauty of a flower so easily ruined by a careless or clumsy touch. The less that an expanded Auricula pip needs to be meddled with, the better; but if it is to be handled at all, it

must be by the combination of a steady hand, a clear eye, a delicate instrument, and a knowledge of the texture and habit of the flower. Unless the "paste" be already flat, it will be impossible to lay the petals down without fatal injury to the pip. The result of an attempt to flatten the flower while the paste is cupped will be to split it, for the circle of larger circumference can only be produced by the creation of an airy segment—a ruinous gap—while if the paste be more than flat, *i.e.*, reflexed, an unevenness corrected there would but be transferred to some other portion of the flower. All this tends to lessen the room there is for at least artificial improvement in the bloom of the Auricula; but a helpful touch can be given sometimes where two petals, coming down, catch each other by the ears or corners, in a struggle for a very slight precedence. The best material for an instrument wherewith to correct irregularities is ivory, the dry, polished surface of which can be laid without hurt even to the mealed face of an Auricula pip.

But if I were asked what is the best way to flatten these exquisite flowers, I should answer, —Work the way clear for the healthy action of all their natural forces; let them receive no check whilst coming into bloom.—F. D. HORNER, *Kirkby Malzeard, Ripon.*


THE ORCHARD-HOUSE.*

 WITHOUT entering on the disputed question whether or not Orchard-Houses are desirable structures in large private establishments, where a constant and abundant supply of dessert fruit has to be kept up, we are quite assured that, under certain conditions, they are desirable for amateur gardeners. Those conditions involve a knowledge of the general principles of orchard-house treatment on the part of the amateur himself, or of those whom he may depute to perform the necessary operations. Before success can be realised, there must be proper and judicious management, but a knowledge of this may be attained by any one having an aptness for gardening pursuits, at a very small cost of application and attention, and it is the very object of this textbook to supply the uninformed with the instructions they require. The numerous editions

through which Mr. Rivers' "Orchard-House" has passed, show that it has found appreciative readers. "The principles of the practice for the cultivation and management of trees in an orchard-house were so true when laid down," writes the editor, "that little deviation from them can be made in the edition now published; but the experience gained during the progress of sixteen editions has enabled me to add something to the rules laid down in the earlier editions." This has been very cleverly and completely done, and the book may in consequence be recommended to all who take an interest in the subject, as being fully brought down to the present date—not only as to the practice which experience has shown to be best adapted to the successful culture of the trees themselves, but also as to the varieties which it has been found most desirable to cultivate.

The book itself is so widely known, that we need not describe its contents further than to say that its pages are mainly devoted to a description of the various forms of Orchard-houses, and an account of the general treatment of the kinds of fruits usually grown in them, the special points on which it is necessary to be informed for their successful management being succinctly laid down, while a chapter devoted to the newer and most eligible varieties of the several fruits treated on will be found useful even to advanced cultivators. We feel assured that no one can intelligently take up orchard-house culture, without feeling satisfied with the results; and no one can take up this book of instructions, without largely benefiting by the perusal of it.—T. MOORE.

KENTIA MACARTHURI.

 HIS fine Palm has been shown during the past season by Messrs. Veitch and Sons, of Chelsea, who have kindly allowed us to reproduce their illustration. They thus describe it in their catalogue:—

"A very elegant Palm, with suberect leaves, and graceful semipendulous leaflets, from the neighbourhood of the Katau river, in New Guinea. It was named by Mr. Wendland after our valued correspondent, Sir W. Macarthur, of Camden Park, near Sydney, N.S.W., to whom we are indebted for its introduction. The stems of the leaves are smooth and slender; the leaflets are from four to eight inches in length, and

* *The Orchard-House* (of Thomas Rivers); or, *the Cultivation of Fruit Trees under Glass*. 16th Edition. Edited and Arranged by T. Francis Rivers. London: Longmans, 1879.



KENTIA MACARTHURI.

from a quarter to half an inch in breadth, marked above by a prominent middle vein, and abruptly terminating in a præmorse manner. In colour they are of a very pleasing and effective green. These characters show that *K. Macarthurii* is quite distinct from the other members of the genus in cultivation. Like them, it is a valuable addition to our decorative resources in every department in which this beautiful class of Palms is in request."

The accompanying figure gives a very good

idea of the aspect of the young plants, which, as will be seen, have a tendency to throw up suckers.—T. MOORE.

THE BEST HARDY ROSES.*

WE have adopted the following means of determining the comparative merits of different varieties. Taking the five

* Abstract of a paper read before the Western New York Horticultural Society.

qualities named in the order of their importance, we assign the following number of points to each:—Colour, 24; form, 22; fragrance, 20; freedom of bloom, 18; vigour and healthfulness of growth, 16,—making a total of 100 points. As will be seen from the table, we have no Rose which may be called perfect; our choicest sorts, excelling in some qualities, fall short in others. Where two or more varieties resemble one another, we have only retained the superior sort; thus Ferdinand de Lesseps and Maurice Bernardin are thrown out as being somewhat similar, but inferior to Charles Lefebvre. This gives a list, therefore, of quite distinct sorts, those which are nearest alike being Alfred Colomb and Mme. Victor Verdier at the head, and they are sufficiently dissimilar to make both essential, even in a very limited collection:—

Name of Rose.	Number of Points.					Total.
Alfred Colomb, crimson	24	22	19	15	13	93
Mme. Victor Verdier, crimson ...	24	22	19	14	11	90
John Hopper, carmine-rose.....	24	20	14	16	16	90
General Jacqueminot, v'l'y'ty crim.	24	16	17	17	16	90
Comtesse de Chabillant, pink ...	23	22	17	13	14	89
Abel Grand, glossy rose.....	23	20	15	16	15	89
Marie Bannmann, carmine-crimson	23	22	18	14	10	88
Charles Lefebvre, deep crimson ...	24	21	16	14	13	88
François Michelin, carmine-rose	24	11	15	15	13	88
La France, silvery rose	24	22	20	18	3	87
Marguerite de St. Amande, bright rose	24	20	12	16	15	87
Climbing Jules Margottin, car- mine-pink	24	19	14	14	16	87
Duke of Edinburgh, bright crim.	24	17	15	15	15	86
Baronne Prévost, rose	23	14	17	16	16	86
Louis Van Houtte, maroon	24	21	20	14	6	85
Paul Neyron, rose	22	19	13	15	16	85
Anna de Diesbach, carmine	24	16	12	14	15	81
Mme. Boll, carmine-rose	24	21	12	8	15	80
Prince Camille de Rohan, dark crimson	24	18	14	12	10	78
Comtess of Oxford, carmine red	24	22	4	14	13	77
Caroline de Sansal, rosy flesh.....	23	15	12	14	13	77
Mme. Alfred de Rougemont, white	20	16	14	18	9	77
Peach Blossom, pink	22	16	10	12	13	73
Coquette des Blanchés, white	23	10	8	18	12	71
General Washington, reddish- crimson	20	18	4	17	8	67
Marquise de Castellane, carmine- red	24	19	2	9	10	64
Baroness Rothschild, silvery pink	24	21	2	12	4	63
La Reine, rose	15	12	10	12	14	63
Etienne Levet, carmine-red.....	24	20	2	10	6	62
Mlle. Eugénie Verdier, silvery rose	24	20	2	8	7	61

A list of this kind would not be complete without mention of some summer Roses. Though blossoming only once a year, some of them, notably the Mosses, are so beautiful as to be essential to a Rose garden of any size or pretensions. We name the following as the best:—For climbers—Bennett's Seedling, Baltimore Belle, and Queen of the Prairies. Among non-climbers, the most desirable are Persian Yellow, Mme. Hardy, Mme. Plantier, and the following Moss Roses:—Crested, Common Moss, Comtesse de Murinais and Salet, the latter, though less beautiful than the others, blooms freely in autumn, and would be quite valuable for that quality alone.

Alfred Colomb, which heads the list with 92 points out of a possible 100, is less fragrant than La France, more coy of its blooms than Coquette des Blanchés, and does not have the lusty vigour of growth possessed by Baronue Prévost, but for the five qualities combined, no sort altogether equals it.

Mme. Victor Verdier is a sister variety of nearly equal worth.

John Hopper, always steadfast and true, comes third. Victor Verdier bears him much resemblance in colour and general appearance, but has neither the fragrance nor vigour of constitution to be counted a rival.

General Jacqueminot, notwithstanding a lack of fullness and rotund form, is now one of our oldest, most generally known, and best Roses for general cultivation. Clad in his rich crimson livery, he is still prepared to lead the van.

Comtesse de Chabillant, possibly from the length of name, is a variety too much neglected and lost sight of. The flowers are not large, but most beautiful, and are models of symmetry and grace.

Abel Grand is another neglected, or at least not well-known, variety of the highest excellence, especially valuable in the fall of the year when competitors otherwise equally meritorious are devoid of even a semblance of bloom.

Marie Baumann! How difficult to depict her charms; original and exquisite in all her features, she claims a choice position in every garden. There is no more beautiful variety than this in the entire list.

Charles Lefebvre is an improved Jacqueminot in form and possibly colour, though somewhat inferior in other qualities.

François Michelin, a comparatively new sort, is rapidly gaining favour. It is a seedling from La Reine, bearing some resemblance to that well-known sort, but decidedly superior in colour and form.

La France is the sweetest of all Roses; compelled to choose one variety, this should be ours. It is not only the most fragrant, but, with the exception of those Hybrid Noisettes, Madame Alfred de Rougemont and Coquette des Blanchés, will yield more flowers during the year than any other sort named. It flowers so profusely that its growth is checked, every eye sending forth a flower-shoot; it is, alas, not very hardy, being the most tender on the list, but though the tops are killed, it will start out again in the spring from the roots.

Marguerite de St. Amande is a worthy companion of Abel Grand, furnishing a generous supply of autumn flowers.

Climbing Jules Margottin, besides being of more vigorous growth, seems, if anything, more beautiful than the old sort, from which it is a sport. It is well worth growing for its buds alone.

Duke of Edinburgh is a bright-coloured Jacqueminot, which is saying all that is necessary.

Baronne Prévost, one of the best of the flat type, is a worthy companion of General Jacqueminot, and a model of vigour and health. It is the oldest variety on the list, having been sent out in 1842.

Louis Van Houtte, like La France, is but half-hardy, and is also worthy of extra care. No other sort so nearly approaches La France in fragrance, and when planted in a bed together, the deep velvety maroon of the one contrasts most beautifully with the delicate silvery rose of the other.

Paul Neyron is the largest variety known, and although its size detracts from our notions of a refined Rose, it is nevertheless a noble sort for any garden.

Anna de Diesbach, a true carmine, has its rivals of the same shade, but her pure, lovely colour has never yet been equalled by any of them.

Madame Boll is almost worth growing for its large, lustrous foliage, but the blooms correspond in size and quality, only are too seldom seen after the June blossoming is over.

Prince Camille de Rohan is a superb, very dark sort, very well known.

Countess of Orford, a splendid carmine-red, of the Victor Verdier type, is, like François Michelon, rapidly becoming popular, its chief defect being a want of fragrance, which it lacks in common with all the Victor Verdier race.

Caroline de Sansal is a well-known and justly popular sort.

Madame Alfred de Rougemont and *Coquette des Blanches* are, all things considered, the best white perennials we have.

Peach Blossom, a comparatively new sort, seems to improve each year, and gives a new shade of colour very desirable.

General Washington, one of the most widely disseminated varieties, does not reach the maximum number of points in any quality. In colour it is sometimes grand, but generally it has somewhat of a faded appearance, being quickly affected by the sun, and seldom seen truly pure. The same may be said respecting form, sometimes superb, but generally with some defect, either a green centre or unsymmetrical. Of fragrance it is almost entirely devoid. It ranks very high as a free-bloomer, but like *La France*, this is at the expense of growth.

Marquise de Castellane does not always open well, but gives many large carmine-rose blooms of globular shape that are truly superb.

Baroness Rothschild has exquisite cup-shaped flowers, entirely distinct from all others. It is, unfortunately, of stubby, short-jointed growth, and can only be propagated by budding or grafting. This will always tend to make it somewhat scarce.

La Reine is another well-known old Rose which we cannot yet afford to discard, though now surpassed by so many finer varieties.

Etienne Levet, somewhat resembling *Countess of Oxford*, is rapidly finding favour, and had it but fragrance would be assigned a higher position.

Mlle. Eugénie Verdier, the last of the list, is certainly one of the most delicately beautiful coloured varieties we have, but here again the lack of fragrance deprives it of a higher position.

We have given the shade of colour in ease any one should desire to select from this list, with reference to having but a few sorts quite distinct from each other in tint; but as already mentioned, Roses vary in form as in colour, and we may have two kinds, of precisely the same shade, yet strongly differing in every other respect, and therefore entirely distinct.—HENRY B. ELLWANGER.

THE PELARGONIUM SOCIETY'S SHOW.

FOR some five years, the Pelargonium Society has now been established, and each year has held a summer exhibition for the display of specimen plants. That of the present season was fixed for June 24, but the cold and sunless weather caused its postponement till July 8, when a very creditable gathering took place at South Kensington, in conjunction with the Rose Show of the Royal Horticultural Society. The principal groups of the Pelargonium family were very well

represented, excepting the Variegated Zonals, which were few, and the Ivy-leaved sorts, of which there were no exhibitors, except in the interesting series sent up from the gardens at Chiswick. There was a large display of seedlings of fine quality, especially amongst the show sorts; and the stands of cut-flowers formed a very brilliant feature of the show. It is much to be desired, however, that one of the special objects of the Society, namely, the production of new hybrids, and thus opening out new fields for development, should receive more attention at the hands of the members than it appears as yet to do:—

SHOW PELARGONIUMS.—These were largely represented. For 6 varieties in pots not exceeding 8 inches in diameter, Mr. James was 1st, with specimens, finely and cleanly grown and beautifully flowered, of *Snowflake*, *Prince Leopold*, *Archduchess*, *Mary Hoyle*, *Princess of Denmark*, and *Pompey*. 2nd, H. Little, Esq., Hillingdon (Mr. J. Wiggins, gr.), with *Congress*, *Florence*, *Brigantine*, *Janette*, a lovely white, which was unfortunately overlooked when the Certificates were awarded, and *Favourite*; these were smaller plants, but well flowered. 3rd, F. Hunt, Esq., York Lodge, Stamford Hill. 4th, Mr. C. Turner, Royal Nursery, Slough.—For 6 varieties, not in commerce, the contest was virtually between the productions of two raisers, viz., the Rev. A. Matthews and E. B. Foster, Esq. Mr. C. Turner was placed 1st, with *Nero* (Matthews), dull red lower petals shaded with maroon, deep red upper petals, with large dark blotches, very fine form, good habit, and very free; *Bertha* (Matthews), salmon-pink lower petals, dark top petals, with broad margin of orange-pink, white throat, good form, and bold truss; *Constance* (Matthews), large and fine soft blush white lower petals, with slight veins of carmine, maroon top petals, with fiery pink margin, and white throat; *Joe* (Matthews), pale violet pink lower petals, with veins and slight blotches of purplish maroon, dark top petals, with wire-edge of pale pink, white throat, rather cupped and rough, but very free; *Osman Pasha* (Matthews), rosy-violet lower petals, dashed with orange, and slightly blotched and veined with maroon, dark top petals, with wire-edge of violet-pink, good form, and very smooth; and *Amethyst* (Bréchant), bright purple lower petals, and shaded with maroon, glossy dark upper petals, with wire-edge of rosy purple, good form, dwarf, and very free. 2nd, E. B. Foster, Esq., Clewer, with varieties of fine quality, but on small and somewhat spare plants; the varieties were *Fireball* (Foster), rich bright deep orange-salmon, of a remarkably vivid tone, the top petals a little deeper in hue, and having a deep black blotch, with a very broad margin and clear white throat, very bold, striking, and showy, of fine form, and of excellent habit; *Benown* (Foster), a very large and fine variety, lower petals orange-salmon, delicately painted and pencilled with dark rich deep top petals, and white throat, finest form; *Prince Imperial* (Foster), in much the same way, but rather more deeply pencilled on the lower petals, the white throat too much veined with purple lines; *Valiant* (Foster), salmon lower petals, tinted with orange, slightly blotched dark top petals, slightly margined with orange-salmon, white throat, good form; *Mountain of Light*, small in size, but bright in colour, deep fiery orange lower petals, dark blotch

on top petals, white throat, a little rough, but striking in colour; and Hector (Foster), orange-salmon lower petals, with slight orange and maroon blotches and veins, dark top petals, a pleasing flower.—In the class for one show Pelargonium, not in commerce, no award was made.

FANCY PELARGONIUMS.—These were also well represented. For 6, Mr. J. James was 1st, with The Shah, Ellen Beck, East Lynne, Princess Teck, Morella, and Mrs. A. Wigan, an excellent lot, well grown and perfectly bloomed. 2nd, Mr. C. Turner, with much smaller but nicely-grown plants, consisting of Mrs. Phipps, Mrs. A. Wigan, Jewess, Mrs. Pope, Henry Bailey, and Mrs. Porter. 3rd, Mrs. Hodgson, the Elms, Hampstead, (Mr. Weir, gr.)—For 6, not in commerce, Mr. Turner was the only exhibitor, and was placed 1st, with Thurio (Turner), purplish-carmine, large white throat, and wide margin of white, very fine; Janette, dark maroon top petals, pale maroon lower petals, pure white throat, and slight margin of white; Sarah Bernhardt, rose, slightly dashed with violet, white throat, and slight edge of white to the lower petals, very pretty; Mrs. Milne-Home, soft violet-rose, white throat, and slight white edge, good form, and very pretty; Loadstone, dark rose and violet top petals, rosy-violet lower petals, and broad margin of white; and Polar Star, rosy-violet, large pure white throat, and white margin, large and very fine form.—The class for a new fancy Pelargonium, not in commerce, brought no entry.

DECORATIVE PELARGONIUMS.—These were shown in strong force, and form a very striking feature, from their floriferous character. For 18, the first prize went to Messrs. J. and J. Hayes, Edmonton, who had grand plants in 32-sized pots, a capital representative lot, consisting of Whetstone Hero, T. A. Dickson, very fine; Triomphe de St. Mandé, Integrity, Mermerus, very fine, one of the best; Gustave Mallet, Triumphans, Petrarch, Prince of Wales, Prince of Pelargoniums, and Captain Raikes, shades of crimson scarlet and red; and of pale-coloured flowers, Maid of Kent, very fine; Bridal Bouquet, Duchess of Edinburgh, Duchess of Morny, La Patrie, and Digby Grand. 2nd, H. Little, Esq., with Mrs. Lewis Loyd, T. A. Dickson, Triomphe de St. Mandé, Dr. Masters, Mermerus, Scarlet Spot, Roseum multiflorum, Whetstone Hero, Queen Victoria, Spotted Patti, Digby Grand, La Patrie, Miss Bradshaw, M. J. Outram, and Duchess of Edinburgh. 3rd, Mr. W. Meadmore, nurseryman, Romford, whose best varieties were Madame Eurard, very bright; Mabel, Baltic, Royalty, and William Bull.—For 6 decorative varieties, not in commerce, Messrs. J. and J. Hayes were 1st, with Black Prince, dark shaded maroon ground, with pale margin, rather rough-looking, but very free; Harlequin, pale orange-carmine, with dark blotches, slightly dark top petals, and white throat, a little rough, but bright and free; Lady Isabel, clear pale violet-pink, with slight purple blotch on each lower petal, top petals with a dark blotch on each, very pretty and pleasing, large trusses, very free, good form—one of the most distinct Pelargoniums staged; Madame Favart, bright deep salmon, with white throat, and slight margin of the same, good habit, very free, but a little rough; Princess of Wales, white ground, stained and veined with rosy-lake, white throat, the flowers large and somewhat rough, but very pretty and pleasing in colour and marking; and Maid of Kent, white, with slight pinkish-lilac blotches.—In the class for one decorative Pelargonium, not in commerce, the 1st prize went to H. Little, Esq., for Miss André (Jackson), a fringed-edged sort, of a delicate flesh-pink, the top petals with dark spot, and the lower ones marked with bright red spots, fine and free, and of excellent habit.

ZONAL PELARGONIUMS.—For 9 varieties in 8-in. pots, Mrs. Lermite, sen., Finchley (Mr. Catlin, gr.), was placed 1st, with large, somewhat flatly trained specimens, grandly bloomed; the varieties were Lizzie Brooks, bright scarlet, very fine; Titania, Rev. M. Atkinson, Mrs. Pearson, Mrs. Leavers, Lucy Bosworth, Mrs. Catlin, Ellen, and Remus, all good exhibition varieties. No second prize was given. 3rd, Mr. W. Meadmore, Romford.—For 6 Zonals, not in commerce, Dr. Denny, Stoke Newington, was 1st, with 6 plants displaying remarkable vigour of growth, and carrying enormous trusses of large, stout flowers, of fine form; they were Romeo, bright scarlet, perfectly circular, and highly finished; Zanoni, deep cerise-scarlet; Dorothea, cerise-scarlet; Ivanhoe, cerise-red; Leander, bright cerise, noble truss; and Allegro, deep pink, in enormous truss and of good outline.—For 18 varieties, in 6-in. pots, Mrs. Lermite, sen., was 1st, with varieties chiefly of Mr. Catlin's own raising, viz., John Wakeford, rich scarlet, fine quality; G. Rawlings, very bright cerise-scarlet, fine form; Edgar Catlin, very bright orange-scarlet, large and very free; Cymbeline, pale scarlet, very showy; Lizzie Smith, clear soft rosy-pink, fine form and noble trusses; Fanny Lues, deep pink; May Banks, pale lilac-pink; and Waldenstein dark violet-cerise, fine form. 2nd, H. Little, Esq., with Lizzie Brooks, Jeanne d'Arc, Havelock, A. F. Barron, Ferdinand de Lesseps, Cleopatra, and Mrs. Pearson, as his best subjects; 3rd, Miss Christy, Combe Cottage, Kingston, (Mr. G. W. Moorman, gr.)—For one variety not in commerce, H. Little, Esq., was 1st, with Rosa Little, very bright scarlet, of good form, and very free, dwarf and compact in habit, the foliage having a narrow chocolate zone well displayed on pale yellowish-green leaves. This promises to become very useful for potwork and for bedding purposes.—For 9 double-flowered Zonals in 8-in. pots, the 1st prize went to some admirably grown and nicely flowered specimens from J. Simpson, Esq., Wray Park, Reigate (Mr. J. King, gr.); the deepest-coloured wore C. Wagner, Mons. Buchler, Guillion-Mangilli, Auguste Villaume, Victor Hugo, and Wonderful; the pale salmon-coloured varieties, Henri Beurrier and Louis Buchner; and the pale-pink Lucie Lemoine. 2nd, Mrs. Lermite, sen., with Jacobæa (Laxton), Madame Thibaut, pink; Eugène Bandouin, Naomi, and Le Cygnée, pure white. 3rd, Mr. W. Meadmore.—For 4 double-flowered Zonals, not in commerce, Dr. Denny was 1st, with Pioneer, very bright scarlet, large and full of flower; Stability, orange-scarlet, very bright and effective; Gorgeous, glowing scarlet, of striking character; and Refinement, white tinged with pink, and not very inviting as shown.—In the class for one double-flowered Zonal, not in commerce, no award was made.

NOVELTIES.—A large number of seedlings were entered and adjudicated upon by the Executive Committee, who awarded First-class Certificates to the following Show Pelargoniums:—Charlotte (Matthews), a very pleasing soft blush variety, with dark top petals; Flag Captain (Foster), pink lower petals, with slight dark veins, large and bold dark top petals, free form and substance; The Baron (Foster), rosy-salmon lower petals, with slight carmine veins, white throat, and dark top petals, very fine; Fireball (Foster), one of the most brilliant of the novelties, already described; Sensation (Foster), bright rosy-pink lower petals, flushed with orange, and marked with dark blotches and veins, dark top petals, white throat, fine form; The Pope (Foster), violet pink lower petals, white throat, fine dark top petals, large and bold; Alice (Foster), pale soft pink lower petals, top petals with small intense black spot, pink margin, and white throat, a charmingly

delicate flower of very fine quality. On June 24th, First-class Certificates were also awarded to Joe (Matthews), of excellent form, with violet-pink lower petals, dark maroon upper petals, and white throat—a fine decorative variety, and as such certificated; Emperor William (Foster), a painted flower, the lower petals rich rosy-pink, top petals deep maroon, throat pure white, large, and of grand form and excellent habit; Invincible (Foster), a very showy flower, with salmon lower petals, and the upper ones of dark maroon. A fine group of a new variety, Illuminator (Foster), which is certain to become a great favourite with gardeners, so excellent is its habit, and so striking the colour of the flowers, was also set up; the flowers are scarlet, with a white throat, and a dark blotch on each upper petal.

Of Fancy Pelargoniums, there were Certificated: Electric Light (Turner), pale violet-rose, large white throat, and white margin to the petals, very pretty; Sarah Bernhardt, already described.

Of Decorative Pelargoniums, awards of First-class Certificates were made to Princess of Wales (Bull), Black Prince (Hayes), and Mdlle. André (Jackson), already described.

Zonal Pelargoniums were numerous, and the following were selected for Certificates:—Fanny Thorpe (Catlin), pale salmon, with fiery orange centre, large, well-formed pips, and grandly set close truss; Edgar Catlin (Catlin), very bright scarlet, fine perfect pip, and bold truss, free bloomer; Lizzie Smith (Catlin), deep rosy-pink, very fine and showy, the truss bold; Commander-in-Chief (Denny), bright scarlet, very free and effective, promising to make a good bedder; Dudu (Denny), very large, bright scarlet, with fine pips crowded in the noble truss; Horatius (Denny), very dark cerise, the pips fine in form, produced in huge trusses; Leander (Denny), bright cerise-scarlet, of fine quality, with stout petal, and excellent in form; Allegro (Denny), deep pink, a fine hue of colour, immense trusses; Romeo (Denny), rich bright scarlet, large, well-flowered pip, and enormous truss; Dauntless (Denny), double-flowered, deep bright scarlet, of a good shade of colour, the flower full and of fine shape; Pioneer (Denny), cerise-scarlet, very bright, the flowers large and the habit good.

—M.

NEW POTATOS IN WINTER.

IN your magazine for March this year, I saw a remark or two on growing New Potatos for the winter, which has suggested my sending you, from the *Alphabetical Receipt-Book*, by B. Huish, Esq. (1837), an account of another method, which in part I tried, and had some dear little Potatos, but had not patience to go through with:—

“For Producing New Potatos throughout the Winter Months.—Prepare a proper quantity of red sand, rather of a loamy nature, and mix it up with a portion of lime in powder—viz., about one-third—about 14 days before using it. This soil is to be spread about 3 in. thick at the bottom of any old wooden box, or on a very dry brick cellar-floor; the cellar ought not to be exposed to the frost, nor yet too much confined from the air. Procure a measure or two of large potatos of a prior year's growth; the sorts preferred are the Red Apple Potatos and the Pink-eyed Purple Potatos. Set these on the soil whole about 3 in. apart, with the crown, or the

principal eye, to the soil, in preference; but put no soil over them. Plant about September 20th, which allows from 10 to 12 weeks for their growth. The old Potatos will throw out numerous sprouts or stalks, with many Potatos growing on them.

“The original Potatos for planting whole for sets in September should be such as were of perfect growth in the October of the preceding year, and well preserved during the winter. The sprouts which shoot from them should be removed by the end of April; and these sprouts, which will be from 6 in. to 26 in. long, may be planted with all their fibres in a garden for a first crop about June 15th. The Potato sets may be sprit again, and the sprouts planted for a second crop, and in September the Potato sets may be sprit a third time, the sprouts of the last produce being thrown away as useless. At the end of September the original or seed Potato is to be gently placed on the soil, as before mentioned, for a Christmas crop.

“At the end of three months, at furthest, the old Potatos should be carefully twisted from the new ones, and the sprouts taken off the old Potato; the old Potato is then to be placed on its bottom or side on a fresh bed of soil, prepared as before, and left to produce another crop, from fresh eyes placed next the soil, as you are to observe that the old Potato should not be set or placed twice on the same side; and you must take care at that time to remove the sprouts, to prevent the moisture from rotting the old Potato.

“By the above method, four crops of new Potatos may be had from one Potato, exclusive of those produced from the sprouts planted in the garden in April and June, from which may be obtained two crops of well grown Potatos, in September and October, weighing from ten to twelve ounces each. The Potatos are remarkably well flavoured, and may be kept longer without prejudice after gathering before dressed, than Potatos grown in the natural ground.”

I consider Mr. Gilbert's a far preferable plan, but the above will show what pains the “old folks” took, without the appliances of the present day.—ELIZABETH STEPHENS, *Frogmore*.

MACKAYA BELLA.



BEAUTIFUL woodcut illustration of this rarely seen and charming South African Acanthad, was published recently in our contemporary, the *Gardeners' Chronicle* (May 17, 1879), the figure having been prepared from specimens flowered by Mr. Green, gardener to Sir George Macleay, of Pendell Court, Bletchingley. It was shown by Mr. Green at the Royal Horticultural Society's meeting on April 8, and received a cultural commendation from the Floral Committee.

This species has the character of being difficult to flower, and it is seen so rarely, that this is probably true; hence it may be useful to record Mr. Green's mode of treatment. The specimen at Pendell Court is an upright-growing, soft-wooded, bushy plant, over 6 ft. high and about 4 ft. through. It is planted out in

a warm greenhouse, in a border of rich turfy loam and leaf-soil, with good drainage, and being kept well supplied with moisture during the summer months, it grows freely, but to get it also to flower freely it is necessary during the autumn and winter to give but little water, so that the summer growth may get well hardened off. As regards growth, the plant is kept almost at a standstill for a time, and in this condition it will bear a somewhat low temperature, but it is necessary that sufficient water should be given to prevent the leaves falling off, or the plant will become disfigured. It requires plenty of sun and light to mature the growths, and a thorough watering should be given just as the flower-buds appear. When in flower, the temperature of the house should be kept between 55° and 60° .

The plant in question bore over 400 terminal racemes of its delicate pale lilac flowers, which continued in perfection for a considerable time. When planted out in this way, it is certainly a magnificent plant, and Mr. Green is to be congratulated upon his discovery of a method of treatment by which it is induced to flower so freely.—T. MOORE.

IMPATIENS JERDONIÆ.

IT often happens that plants requiring different treatment from the generality of others, even if specially beautiful in themselves, are allowed to go almost out of cultivation; this is more particularly the case with subjects requiring to be cultivated under glass, especially if in addition they are not well adapted for use in a cut state; for with the present and ever-increasing demand for cut flowers, one of the first considerations with gardeners is, of necessity, will the flowers stand when cut? And it cannot be denied that this consideration has been the means of driving many beautiful plants into the shade, and to a very great extent reducing the interest attached to the generality of our plant-houses.

When the *Impatiens Jerdoniæ* first became known, almost every one possessing a house kept at a stove or intermediate temperature grew it; the little room it needs, its profuse habit of blooming, and the distinct character of its flowers made it well deserving of a place; but with many it turned out to be rather a catchy subject, not difficult to grow, so long as it kept

in health, but liable to damp-off at the bottom, and when examined, it usually turned out that the roots were rotten. This result was, in most cases, attributable to the use of too much water, often combined with over-much pot-room, and to its not being grown near enough to the glass. The effect of the latter tends always to make plants not only able to bear, but also to require more root-moisture. The loss of the plants in this way most frequently occurs in the winter, when it needs little more moisture in the soil than many orchids, its succulent stems during the season of rest containing enough moisture to sustain it in health, with little assistance from the roots. It strikes freely from cuttings, put in any time during the spring or summer, inserted in small pots, well drained, and filled with a mixture consisting of half-fibrous peat and half-chopped sphagnum, with a large admixture of sand, and a good sprinkling of crocks, or charcoal broken small—in fact, material such as most orchids will thrive in, with the addition of sand. The cutting-pots may be surfaced with sand alone. Select stout, firm pieces of the extremities of the shoots, three or four inches in length, and insert them an inch into the sand, giving very little water until they are rooted, only just enough to keep the cuttings from shrivelling. They should be covered with a bell-glass, but this must be well tilted up, not kept close down, as usual with most other things, or they will be liable to rot. If possible, place them on a shelf in a warm house, and do not shade much as they show signs of rooting, which they will do by making growth at the points; gradually remove the bell-glasses, and give enough water to keep them going slowly through the autumn. They had better remain in the little pots during the winter, giving them a position as near the roof as can be afforded. A shelf over the path in a stove kept at an ordinary temperature will suit them, applying only sufficient water to keep the shoots from shrivelling.

About March the higher temperature will cause them to commence growth, and as soon as they have pushed a few leaves, move them into pots three inches larger, using material similar to that with which the cutting-pots were filled. The little plants usually break out of their own accord without stopping, but





V. H. Fitch del.

Apple Red Winter Reinette.

P. De Pauwmaecker. Chromolith. (Jan 1, 1884).

if any run away without breaking, pinch off the points, which will soon cause them to branch. By the end of May they will bear another shift, giving pots a couple or three inches larger, according to the progress they have made both in tops and roots, still keeping them near the glass. They will now take more water and will grow away freely in warmth, such as ordinary stove stock requires; by the end of July, if all goes well, the plants will show flower, which will advance apace, and for several weeks they will be thickly clothed with their singularly beautiful yellow red-tinged semi-transparent flowers. After blooming, keep

them in the same pots, and treat as advised through the preceding winter.

Young plants are generally the most satisfactory, and if a few bits were taken off in the spring, these will have made nice plants for blooming the ensuing summer, getting to a much larger size than the autumn-struck ones, although it will be well again in the latter part of summer to put in a few more cuttings. It is an excellent subject for growing in a basket suspended near the roof where its flowers are seen to even more advantage than on the stages of the house.—T. BAINES, *Southgate*.

BAUMANN'S RED WINTER REINETTE APPLE.

[PLATE 496.]

ON the figure of this handsome Apple given in the accompanying plate, Mr. Fitch has happily combined a portrait and a picture. It was exhibited at one of the Royal Horticultural Society's meetings in October last, from the Chiswick garden, under the name of Red Winter Pearmain, and was so well appreciated by the pomological tribunal—the Fruit Committee—that it received the award of a First-class Certificate, which it well deserved. We quote from Dr. Hogg's *Year-Book* the following descriptive memoranda, which embodies all that is known respecting it:—"This very handsome Apple was received by the Royal Horticultural Society from Germany some years ago, and fruited for the first

time last year. It is an exceedingly handsome apple, of large size, and highly coloured, resembling the Blenheim Pippin. *Fruit* large, of regular and handsome form, globular, and generally somewhat flattened, yet frequently inclined to be a little conical. *Stalk* slender, inserted in a round cavity. *Eye* large, the segments closed, set in a shallow irregular basin. *Skin* straw-coloured on the shaded side, bright glowing crimson on the exposed side, and extending over the greater portion. *Flesh* pale, firm, not very juicy, and slightly acid. "Keeps well. Fit for use throughout midwinter." Our figure shows that it is one of the handsomest Apples which have been lately brought into notice.—T. MOORE.

DECORATIVE GRASSES.

ON a paper read before the Berlin Horticultural Society, and published in its *Monatsschrift*, Herr Garten-Inspector Bouché has given some interesting details respecting the use of Grasses and Cyperads for garden decoration, and of some portions of these observations we here introduce a free translation. The *Arundo Donax* was one of the plants first employed for decoration in Berlin, then the *Papyrus antiquorum*, and afterwards, in order to soften the character of the heavy groups of Cannas, Colocasias, and other large-leaved plants, and to give them a more graceful aspect, a larger number of this class of plants was introduced. The Berlin Botanic Garden possessed an extensive collection of graminaceous and cyperaceous plants, and hence Inspector

Bouché was induced to give many of them a trial, and he here records the results. The following *Graminaceæ*, or true grasses, are referred to:—

Panicum micranthum, H.B.K., from Caracas, is a grass of extremely elegant habit; the stalks form a very dense cluster, 40 in. high, with elegantly drooping leaves. In winter it needs to be well exposed to light, and to have a temperature of 12°-14° R. [55°-65° F.]

Panicum sulcatum, Aubl., raised from seed sent by Dr. Blumenau in 1855 from St. Katharina, Brazil, resembles *P. crus Ardeur*, W., which comes from the same place, and *P. palmifolium*, Koen. (*P. plicatum*, Hort.), from the East Indies, but differs essentially, by its much broader and more elegant bright green leaves, recalling those of *Curculigo*. It requires in winter a heat of 12°-14° R., and in summer,

to be sheltered against the wind, for if much exposed, the leaves suffer in the young state, by rubbing against each other, that after unfolding they appear torn and disfigured.

PANICUM CRUS ARDEÆ, *W.*, differs from the former by its taller habit (40-60 in.), and more elegant growth; it requires the same treatment.

EULALIA JAPONICA, *Trin.*, from Japan, I found in 1857, in the Halle Botanic Garden, where it was imported, but it was there cultivated in pots, and from want of nourishment presented a miserable, starved appearance. It stands very well in the open air, if covered. The pot-plants pass the winter best in a cold greenhouse, where they sometimes form panicles of flowers on the 6 ft.-high stalks, these resembling those of *Phragmitis communis*. In the open air it does not blossom, because the inflorescence is only developed on culms which are two years old. As a solitary plant on lawns or grass-plots it is very handsome, forming a bush 40-60 in. high, well set on all sides with leaves drooping in light curves. *Eulalia japonica fol. albo-variegatis* of gardens may perhaps belong to another species, for its growth is much more graceful, and the leaves considerably narrower. The variety with cross-banded leaves is as yet scarce in German gardens, but much to be recommended.

GYMNOTHRIX LATIFOLIA, *Schult.*, from Monte Video, is, by its bright green, broad, elegant, overhanging leaves, and the dark brown stalks thickened at their internodes, a highly interesting grass, which, especially as a single plant, is very effective. By profuse manuring, it gets over 6 ft. high. At the base of the plant the internodes thicken, as in *Panicum bulbosum*, so strongly that they appear like walnut-sized bulbs, which put forth lateral stalks afresh. In very mild winters it has held out here under a covering of leaves in the open air. However, it is better kept during the winter at a temperature of 10° R., in a light place.

ERIANTHUS RAVENNÆ, *Beauv.*, indigenous to the Mediterranean and Caspian regions, holds out well with us, under a covering of leaves, in the open air. It is a very recommendable grass, and not so easily killed in winter as *Gynerium argenteum*, and forms a bush 5 ft. high, whose leaves droop on all sides in light curves. The flower-stalks attain a height of 7 ft., but the panicles can lay no claim to beauty, yet it is very effective, as an individual plant.

SORGHUM HALEPENSE, *Pers.*, a grass which, under this name, was imported hither from Cairo, has not yet bloomed. The creeping rhizomes hold out here very well in the open air under a protection of leaves, and develop in the course of the summer stems 7 ft. to 8½ ft. high.

PHYLLOSTACHYS BAMBUSOIDES, *Sieb. et Zucc.*, from Japan, is a very decorative plant, which becomes especially beautiful when it is planted

near water, where it puts forth underground stolons 6-16 ft. long, and spreads extraordinarily. Like all the *Bambuseæ*, the 3-6 ft. high stalks are shrubby and branching, and continually clothed with broad evergreen leaves. The plant endures our winters remarkably well out-of-doors, if one lays down the stalks and covers them with fir branches and leaves. The highly-recommended species of *Bambusa* from China and Japan, which in Paris, many Italian gardens, and in South Germany, are so often, and with full claim, used as decorative plants, do not hold out with us, at least it is difficult to maintain during the winter the shrubby stalks under the covering; one does better, therefore, to place them in pots in the autumn, and to let them pass the winter in a house which is merely frost-proof.

NEW MUSAS.

IN the *Catalogue of New Plants*, &c., recently issued by M. Salviati, of Florence, besides the wonderful *Amorphophallus*, or *Conophallus Titanum*, described at p. 188 of our volume for 1878, the following Sumatran Musas are announced as being ready for distribution, and of which they give the particulars subjoined.

MUSA SUMATRANA, *Beccari*, *sp.n.*—This elegant and quite new Banana-tree grows wild in the virgin forests of Sumatra, along with the *Amorphophallus Titanum*. Its elongated foliage is of a sea-green colour, and even in the young specimens it is elegantly striped with maroon-red. It produces bunches of cylindrical curved fruits, 3 in. to 4 in. long, of the size of one's little finger. Its flowers are unknown; but the species is well distinguished among all those which produce falling fruits, by its flattened seeds, with sharp and irregularly-toothed edges. It is a very ornamental plant, on account of its beautiful foliage, and will succeed on the open ground in summer.

MUSA TROGLODYTARUM, *Gartner*.—The name given to this plant is most appropriate, for it is the Banana tree of the first inhabitants of the forests, *i.e.*, the apes. The fruits of these plants, which culture has rendered exquisite and nourishing, are filled, in the wild state, with an innumerable quantity of seeds, which, although enveloped in a small quantity of sweet and agreeable pulp, render them unserviceable for human nourishment. The present species is of the greatest interest; for while those cultivated under the names of *Musa sapientum*, *paradisiaca*, *rosacea*, &c., are forms produced by culture, and do not

give seeds, this species is still in the primitive state; and those which man has known how to ameliorate and transform into very useful plants, are doubtless derived from the latter. The seeds have been gathered on Mt. Singalang, in the island of Sumatra, at the height of 5,000 ft. above the level of the sea, where the ther-

mometer in the morning fell to $+10^{\circ}$ or $+12^{\circ}$, [probably Centigrade = $50-55^{\circ}$ Fahr.] It is a species of great scientific interest, and its beautiful form and superb leaves render it ornamental in gardens, since it will contribute much to their outdoor decoration during summer.—M.




STAPHYLEA COLCHICA.

WE have in this plant a hardy free-growing deciduous shrub, which may be recommended, as being of an ornamental character. It is of bushy branching habit, and has rather pretty compound foliage, the leaves being trifoliate, of elegant form, and of a nice fresh green colour; the more vigorous of the branches terminate in rather dense paniculate heads, of elegantly formed white flowers. It is the Eastern representative of the European Bladder-nut, *S. pinnata*, and is a native of the Caucasian provinces to the East of the

Black Sea. It differs from the European plant in its wider leaflets, its generally erect clusters, and its larger flowers with spreading sepals. Like its congener, it blossoms naturally in spring, and is therefore a desirable plant for choice shrubberies. It is, moreover, a very beautiful subject when forced into early bloom some month or two in advance of its natural season, rivalling the Syringas and Deutzias commonly employed for this purpose. Mr. Bull has obligingly given us the use of the accompanying illustration of a branch.—T. MOORE.

THE NORTHERN COUNTIES TULIP SOCIETY.

 THE sixth Annual Exhibition of this Society took place on June 14th, at the Abbey Hey Hotel, Gorton, Manchester. The display of this gorgeous flower was in every respect a grand one, something like 1,000 flowers having been staged; while in regard to the quality of the blooms, the show was most satisfactory. Many of the older Tulip-growers, such as Messrs. Whittaker, Barlow, Woolley, Mellor, Hague, Morris, Lea, Heap, &c., were again to the fore; while younger cultivators were found to be pressing into the front ranks of the fanciers, so that, at the present time, there seems to be no danger of any serious break in the succession.

Among the novelties which were staged on this occasion, the highest rank must be assigned to *Nancy Gibson*, a feathered rose. *Target*, in the feathered-bizarre class, is a flower of excellent points, bidding fair to be a leading exhibition variety, when it becomes better known; it is now wholly in the hands of Mr. Whittaker. *Mrs. Rothwell*, among feathered byblœmens, promises to be very useful, as also does *Nora Darling*; while *Majestic* and *Crinoline* have good qualities as feathered roses. The first-prize flamed byblœmen, *Queen of May*, shown by S. Barlow, Esq., is a fine bold flower, with a good cup and well-marked petals; it is a seedling raised by the veteran Mr. John Hepworth. In the breeder classes, Mr. Barlow had fine examples of *Excelsior*, *Lord Delamere*, and *Glory of Stakehill*. Mr. Whittaker's first-prize stand of six breeders consisted of good old sorts, shown in rare form. Of bizarre breeders, *Gauntlet* was shown in the best form yet seen at these shows. Of rose breeders there were two of some novelty of character, *Madame Maria* and *Miss Bates*, which also are seedlings raised by Mr. Hepworth.

6 TULIPS, one feathered and one flamed in each class (guinea subs.):—1st, Mr. T. Whittaker, Salford, who showed fine blooms of Masterpiece, Sir Joseph Paxton, Industry, Bridesmaid, Violet Aimable, and Madame de St. Arnaud. 2nd, S. Barlow, Esq., J.P., Stakehill House, Castleton, with Modesty, Dr. Dalton, Talisman, Violet Aimable, Madame de St. Arnaud, and Sir Joseph Paxton; these flowers were of superior quality, but they lacked the size of those from Mr. Whittaker, who was fully a week further in bloom. 3rd, Mr. D. Woolley, Stockport, with Sir Joseph Paxton, Sulphur, Princess Royal, Maid of Orleans, and Mabel, both feathered and flamed. 4th, Mr. T. Mellor, Ashton-under-Lyne. 5th, Mr. Joshua Hague, Stockport. 6th, Mr. Morris, Leigh.

6 TULIPS, one feathered and one flamed in each

class (half-guinea subs.):—1st, Mr. R. Ashton, with Masterpiece, Sir J. Paxton, Chancellor, Violet Aimable, Heroine, and Mabel. 2nd, Mr. J. Turner, Manchester, with Masterpiece, Ajax, Chancellor, Violet Aimable, Modesty, and Aglaia. 3rd, Mr. H. Travis, with Masterpiece, Sir Joseph Paxton, Violet Aimable, Duchess of Sutherland, Heroine, and Aglaia. 4th, Mr. T. Lecch, Howley Hill.

3 TULIPS, feathered, one of each class:—1st, Rev. F. D. Horner, Kirkby Malzeard, with George Hayward, bizarre; Modesty, rose; and an unknown byblœmen. 2nd, Mr. H. Travis, with Masterpiece, Heroine, and Violet Aimable. 3rd, Mr. J. Turner, with Surpasse Catafalque, Bridesmaid, and Bion. 4th, Mr. T. Mellor, with Charles X., Heroine, and Violet Aimable. 5th, S. Barlow, Esq., J.P. 6th, Mr. D. Woolley.

3 TULIPS, flamed, one of each class:—1st, Mr. D. Woolley, with Sir J. Paxton, Triomphe Royale, and Bessie. 2nd, Mr. W. Whittaker, with Sir J. Paxton, Madame de St. Arnaud, and Adonis; 3rd, with Sir J. Paxton, Aglaia, and Lord Denman. 4th, Mr. H. Travis, with Sir J. Paxton, Aglaia, and Duchess of Sutherland. 5th, Mr. T. Mellor. 6th, S. Barlow, Esq., J.P.

2 TULIPS, one feathered and one flamed:—1st, Mr. W. Whittaker, with Masterpiece and Dr. Hardy. 2nd, Mr. H. Travis, with Aglaia and Heroine. 3rd, Mr. T. Mellor, with Madame de St. Arnaud and Rachel. 4th, Mr. D. Woolley, with Heroine and Carbuncle.

TULIP, one feathered bizarre:—1st, Mr. W. Whittaker, with Masterpiece; 2nd, with Charles X.; 3rd, with Sir J. Paxton; 4th, with Masterpiece; 5th, with Target. 6th, Mr. T. Mellor, with Lord Lilford; 7th, with Sulphur. 8th, Mr. W. Whittaker, with John Wilkinson.

TULIP, one feathered byblœmen*:—1st, Mr. Whittaker, with Adonis. 2nd, Mr. J. Lee, with Agnes. 3rd, Mr. Whittaker, with Adonis; 4th, with Mrs. Rothwell. 5th, Mr. Travis, with Violet Aimable. 6th, Mr. Whittaker, with Rubicon; 7th, with Nora Darling; 8th, with Majestic.

TULIP, one feathered rose:—1st, Mr. Whittaker, with Nancy Gibson; 2nd, with a seedling; 3rd, with Industry; 4th, with Aglaia; 5th, with Heroine. 6th, Mr. T. Mellor, with Rachel. 7th, Mr. Whittaker, with Crinoline. 8th, Mr. T. Mellor, with Mabel.

TULIP, one flamed bizarre:—1st, Mr. J. Hague, with Sir J. Paxton. 2nd, Mr. Whittaker, with Ajax; 3rd, with Dr. Hardy; 4th, with William Willison; 5th, with Sir J. Paxton; 6th, with San Jo. 7th, S. Barlow, Esq., with Orion; 8th, with Sulphur.

TULIP, one flamed byblœmen:—1st, S. Barlow, Esq., with May Queen. 2nd, Mr. D. Woolley, with Chancellor. 3rd, Mr. J. Morris, with Adonis. 4th, Mr. J. Heap, with Lord Denman. 5th, Mr. W. Whittaker, with Sir J. Paxton; 6th, with Magnus. 7th, Mr. H. Travis, with Duchess of Sutherland. 8th, Mr. W. H. Clayton, with Bessie.

TULIP, one flamed rose:—1st, Mr. D. Woolley, with Aglaia. 2nd, Mr. R. Ashton, with Mabel. 3rd, Mr. T. Mellor, with Madame de St. Arnaud. 4th, Mr. D. Woolley, with Aglaia. 5th, Mr. Whittaker, with Lady C. Gordon; 6th, with Triomphe Royale; 7th, with Nancy Gibson. 8th, Mr. T. Mellor, with Ada.

6 BREEDER TULIPS, two in each class:—1st, Mr. W. Whittaker, who showed Dr. Hardy, William Willison, Talisman, Norval, Mabel, and Lady Grosvenor. 2nd, S. Barlow, Esq., J.P., with Ex-

* At p. 102, second column, 20 lines from the bottom, for "TULIP, one feathered and one flamed, dissimilar," &c., read, "TULIP, one feathered byblœmen."

eelsior, Lord Delamere, Glory of Stakehill, Alice Gray, Mrs. Barlow, and Lady Grosvenor. 3rd, Mr. T. Mellor, with Sir J. Paxton, Sulphur, Adonis, Alice Gray, Annie McGregor, and Queen of England. 4th, Mr. J. Hagne.

3 BREEDER TULIPS, one in each class (guinea subs.):—1st, Mr. Whittaker, who had William Willison, Norval, and Miss Nightingale. 2nd, S. Barlow, Esq., with Excelsior, Alice Gray, and Mrs. Barlow. 3rd, Mr. D. Woolley, with Sir J. Paxton, Mabel, and an unknown byblomen.

3 BREEDER TULIPS, one in each class (half-guinea subs.):—1st, Mr. R. Ashton, with Sir J. Paxton, William Bentley, and Mabel. 2nd, Mr. J. Wild, with William Lea, Alice Gray, and Olivia. 3rd, Mr. W. H. Clayton. 4th, Mr. J. Heap.

TULIP, bizarre breeder:—1st, Mr. T. Mellor, with Gannet; 2nd, with Sulphur. 3rd, Mr. Whittaker, with Dr. Hardy. 4th, Mr. J. Lee, with Sir J. Paxton. 5th, S. Barlow, Esq., with Lord Delamere. 6th, Mr. T. Mellor, with Storer's Seedling.

TULIP, byblomen breeder:—1st, Mr. Whittaker, with Rubicon. 2nd, Mr. Mellor, with Chancellor; 3rd, with Northern Light. 4th, Mr. R. Ashton, with William Bentley. 5th, Mr. Mellor, with Bridesmaid. 6th, Mr. W. Whittaker, with Maid of Judah.

TULIP, rose breeder:—1st, Mr. Whittaker, with Madame Maria; 2nd, with Miss Bates; 3rd, with Juliet. 4th, Mr. T. Mellor, with Mrs. Bright. 5th, Mr. Whittaker, with Annie McGregor. 6th, Mr. T. Mellor, with Olivia.

The Premier Feathered Tulip was Nancy Gibson, from Mr. W. Whittaker, a superb feathered rose, brilliant scarlet in colour, much richer in hue than *Industry*. The Premier Flamed Tulip was Sir Joseph Paxton, from S. Barlow, Esq., bloomed in this eminent cultivator's best style. The Premier Breeder Tulip was Alice Gray, from Mr. James Wild, the Secretary of the Society.

ROSE-CULTURE EPITOMISED.



ONE of the judicious acts of the National Rose Society has been to issue, with the view of their being distributed amongst the members of Rose Societies, certain brief directions embodying the chief points to be observed in Rose-culture, as determined at a recent meeting of the Committee. We produce them here, for the benefit of those of our readers who may not be members of the Society:—

“SITUATION.—A place apart from other flowers should be assigned to them, if possible sheltered from high winds, but open, and not surrounded by trees, as closeness is very apt to generate mildew; where they cannot have a place to themselves, any part of the garden best fulfilling these conditions will answer.

“SOIL.—A most important item in their successful culture. That which they especially delight in is a rich, unctuous loam, that feels greasy when pressed between the fingers; where this is not to be had, the soil must be improved—if light, by the addition of stiff

loam, well worked in; where heavy, good drainage is the most essential requisite for success.

“STOCKS.—For standards the Dog Brier is the stock. Dwarfs may be either (1) on their own roots, (2) on the Manetti, (3) on the seedling Brier, or (4) on Brier cuttings. No. 1 are a much longer time in making plants, and only some do well; 2 a very suitable stock for most soils, especially for those of a hot or gravelly nature, but apt to be too vigorous for weakly growers; 3 suits every variety, and makes very strong roots; 4 is very nearly similar, and suitable for all soils. For Teas and Noisettes, either 3 or 4 are unquestionably the best. In buying Roses, choose vigorous growers only.

“PLANTING.—November is the best month, but it may be done any time when the ground is in good order during the winter months. In planting budded plants on the Manetti, place the point of junction beneath the soil, as the rose will then make roots, and the plant has a double chance. Mix some loam and well-rotted manure together, open a good-sized hole, and fill it with the fresh soil; plant firmly. Tea Roses should be protected by fern, loosely scattered among them. Shorten any very long shoots, and if exposed to winds, secure the plant by short stakes.


“MANURING.—Roses are strong feeders, and will take almost any amount of manure; pig-manure is the best, except in hot soils, when cow-dung is preferable; stable-manure is generally available, and good. Exhibitors generally apply a top-dressing in spring, but it does not improve the appearance of the beds; it is a good plan to place dung on the beds in winter, to be dug-in in the spring.

“WATERING.—When coming into bloom, if the weather is dry, give a good drenching twice or three times a week; continue after blooming, to prevent mildew; if greater size is required, liquid manure may be used. Syringe daily for green-fly. The Rose-maggot should be carefully looked after in early spring, and be crushed. The beds should be kept constantly stirred.

“PRUNING.—This may be done any time after the beginning of March, according to the season; cut out all wood over two years old, and all weakly shoots; weak-growing kinds should be pruned hard, *i.e.*, down to three or four eyes, stronger-growing kinds may be left longer; cut to an eye that points outwards, so as to keep the inside of the plant open. Tea and Noisettes require less cutting-back; the tips should be shortened and weak shoots cut out, and should not be pruned until May. Use a good pruning-knife, in preference to a *sécateur*; it cuts cleaner, and does not bruise the wood.”

VILLA GARDENING.

August.

UGUST is generally looked forward to by gardeners as the month of the year that is "fruitful, serene, and calm," and in which the labour of many previous weeks is sweetened and rewarded with harvests worthy of his reaping. If it should turn out, as we all most devoutly hope it will, to be serene and calm, a very great change must pass over the face of nature. Gardeners of all degrees are anxiously looking for the summer that lingers long in coming; they can only hope and wait.

Greenhouse.—The plants that are now flowering in the amateur's greenhouse are those that are generally out of bloom by this time. The *Azaleas* are not over yet. We have seen some in bloom only very recently, and they have yet to make their summer growth, and ripen their wood, and set their buds. We shall all anxiously look for a fine dry autumn, that blooming and fruiting wood may be ripened, in order to bring forth blossom and fruit in due season next year. The close dull weather is germinating green-fly in great abundance; they fasten themselves on all kinds of plants. The villa gardener must syringe, wash, and fumigate, to rid himself of these pests, for they soon spoil good plants. Among the *Fuchsias*, *Pelargoniums*, *Balsams*, *Petunias*, &c., that are now forming the staple plants of the amateur's greenhouse, such fine and useful things as *Spiræa palmata*, which makes an excellent pot-plant, *Lilium longiflorum*, *Francoa appendiculata*, *Hydrangea hortensis*, *H. stellata prolifera*, *Harrison's Musk*, *Orobis niger*, *Cockscombs*, *Celosias*, *Mimulus*, &c., may be added. The villa gardener will augment the interest he feels in his greenhouse by changing the subjects he cultivates, and from time to time adding something of which he has hitherto had no experience. If he has not grown some of the subjects we have just named, they are well worth obtaining as opportunity serves. A few days ago we saw some of the pretty old *Thunbergias* being well grown in a villa greenhouse; and also some excellent plants of *Phlox Drummondii* in pots. *Pelargoniums* and *Fuchsias* are certain to be the staple plants, because they are on the whole easily grown, and bloom freely, and they supply great variety of colour; but variety is pleasing, and by adding novelty, good knowledge is obtained of plants and their requirements. As soon as the plants of *Primulas*, *Calceolarias*, and *Cinerarias* are large enough, they should be grown on into size, by pricking them off into store-pots, and by potting the largest singly in small pots, so that some nice specimens may be had for early blooming. Some seed of *Cyclamen persicum* should be sown as early in August as it can be had in a ripened state.

Cold Frames.—*Chrysanthemums* should be kept growing strongly, picking off any shoots thrown up from the roots, and keeping the plants well watered and syringed, and free from vermin. A few plants of *Mimulus* growing on in small pots in the cold frame will come in very useful for flowering later on, when the leading plants in the greenhouse decline in bloom. A few good clumps of *Christmas Roses*, *Choice Primroses*, and other things of a similar character, should be potted for flowering at Christmas in the cold frame. All plants that are losing or have lost their foliage, should be kept fairly moist, but not drenched with rain, and the surface-soil kept stirred and free from weeds. Cleanliness in the cold frame is also of great importance; the plants do better, and it is nicer to see the surroundings of plants as clean and neat as possible. It will be a good plan to mix some good potting soil for *Hyacinths* and other bulbs to be potted in a few weeks hence, and keep it turned over, to thoroughly sweeten it. It will then be ready to hand when wanted.


Flower Garden.—A want of growth is generally perceptible, and those who bed complain that the plants, and especially tender things, like *Coleus*, *Alternantheras*, *Amaranthus*, *Iresines*, &c., make no headway. Those who use the hardy *Sedums* largely will find that the season is with them. The bedding plants that are growing, do so somewhat freely, and want more attention, staking such as need it, and tying out so give them room to display themselves. In beds and borders that lie near to shrubby growths, slugs are very troublesome, and greedily eat many things. The villa gardener is fortunate who has kept by him a store of *Asters*, *Stocks*, *Petunias*, *Phlox Drummondii*, &c., for he will find them very useful to supply vacancies. Some cuttings of anything particularly good should be taken, so as to secure having a few plants well rooted by the winter.

Kitchen Garden.—By this time such winter greens as *Scotch Kale*, *Brussels Sprouts*, *Savoy*s, &c., that have been planted-out to stand the winter, should now be looked over, and if at all crowded, every alternate plant can be taken out to make fresh rows. *Cabbages* should be sown the second week in August. Improved Nonpareil and Enfield Market are the two best. Those who are fond of *Spinach* in early spring should sow a little on a warm slope in rich soil, and some *Hardy Hammersmith Cabbage Lettuce*, and *Hardy White Cos Lettuce* also. Hoeing between growing crops is still of great value to them. *Peas* are growing tall this season, and will require taller sticks in many instances. *Celery* should be planted out without delay; a good deal of celery is spoilt by leaving planting too late for the plants to make a good start. *Turnips* should be sown for succession. As *Scarlet Runners* are making

a strong growth, it will be well to top them. Cleanliness is all-important, and weeds should not be suffered to grow if they can be kept down.

Fruit Garden.—Generally there is but a spare crop of fruit, but the trees need attention just as if they were liberally rewarding the labours of the gardener. All good shoots should be nailed-in on wall-trees, so that they may have the assistance of the warmth of the wall in maturing the wood. If any pyramid or bush-trees have become too crowded, they should be thinned a little to admit sunshine among the spurs and shoots, that should be preserved. If this dull wet weather lasts, the fruit cultivator will not be troubled very much with wasps and flies, and they will not find a great deal of fruit to devour.—SUBURBANUS.

GARDEN GOSSIP.

 THE SUMMER EXHIBITIONS both in London and the Provinces have been a good deal influenced for the worse by the unpropitious weather. Especially has this been the case with the exhibitions of Roses and other cut flowers, most of which have been postponed in consequence of the lateness of the bloom. The NATIONAL ROSE SOCIETY'S SHOW at the Crystal Palace on June 28th, held on the date originally fixed, was a failure viewed as an exhibition of Roses, though Mr. Jowitt, of Hereford, put up "one of the largest and finest blooms of *Niphotos* that had probably ever been shown."—The ALEXANDRA PALACE ROSE SHOW on July 5th, being later, was a considerable improvement on the National Show, but not equal to the shows of former years. Mr. Baker's flowers were here pre-eminently good.—The ROYAL HORTICULTURAL SOCIETY held a show of Roses and Pelargoniums on July 8th. The former were, like most others this season, limited in quantity and generally deficient in quality, while the latter were of fair average merit. A notice of these will be found on another page. The evening *fête* which took place on July 9th was admirably carried out, and but for an unfortunate downpour of rain about nine o'clock, must have been an unqualified success. The large conservatory, some parts of the garden, and the large marquee, were illuminated by the electric light. A fine effect was obtained by hanging lines of coloured lamps from tree to tree along the sides of the walks, and upon the most conspicuous of the trees themselves, while the fountain was rendered a conspicuous object by similar means. The cascade and basin at the foot of the Prince Consort's Memorial were admirably lighted up by two powerful electric lights. Every hour the gardens were illuminated with coloured fires. Amongst the objects of interest displayed were a large collection of Japanese books, and other curious objects, selected from the museum of Messrs. Veitch and Sons, at Chelsea; and a collection of Medicinal and Carnivorous Plants from Mr. Bull, who also introduced a group of small yet exceedingly pretty plants, such as *Sonerilas*, *Anacardium*, &c., under the general designation of "Botanical Jewels."

— THE appointment of CURATOR of the ROYAL BOTANIC GARDEN, GLASNEVIN, has fallen to the lot of Mr. F. W. MOORE, son of

the late Director, and who has for some time been Curator of the College Botanic Garden. Glasnevin is one of the most important botanical establishments of the United Kingdom, and the appointment, while serving as an encouraging tribute to the industry of the son, will, in a most graceful way, do honour to the memory of his late father, Dr. D. Moore, than whom no man holding so prominent a position was more widely respected or more highly esteemed by his fellows. The vacancy thus caused in the staff of the COLLEGE BOTANIC GARDEN has been filled by the appointment of Mr. F. W. BURBIDGE, whose training at Chiswick and Kew, and his subsequent varied experience amongst plants, as well as the knowledge acquired by foreign travel in search of new plants, point him out as the most eligible of the rising generation of garden-botanist cultivators, and eminently fit him for the charge of so important a botanical collection. For such a post it is not a mere cultivator that is required, but one who in addition has a comprehensive knowledge of the vegetable kingdom, a subject which, at the present day, few young gardeners lay themselves out to master.

— At the Alexandra Palace Rose Show, held on July 5th, the best and second-best six trusses of any NEW ROSE of 1877-78-79, were shown by Messrs. Paul and Son, the varieties being respectively *Emily Laxton* and *Mabel Morrison*. English raised Roses, in or out of commerce, were shown only by Messrs. Paul and Son, who took two 1st prizes. Conspicuous in these stands was a new H.P., named *Duke of Teck*, a seedling from *Duke of Edinburgh*, in colour the nearest approach to a scarlet yet shown, and of excellent size and brightness of colour, besides being a strong grower; this is the best seedling of the season so far.

— OWING to the backwardness of the season, many flower-shows have had to be postponed, and among them, that of the Southern Section of the NATIONAL CARNATION AND PICOTEÉ SOCIETY, which, as now fixed, will be held on August 12th.

— THE ODONTOGLOSSUMS AT TRENTHAM, when in bloom, offer a sight not soon to be forgotten. The principal lot occupy the broad front stage of a lean-to house, 80 ft. long, facing the north. On them a short time since there were 150 spikes of open flowers, and such spikes as only the immensely strong growths of plants cultivated like these can produce. They consist of all the leading kinds, including numerous forms of *O. crispum* and *O. Poscatorei*; with *O. nœvium majus*, *O. triumphans*, *O. Hallii*, *O. Cervantesii*, *O. Andersonianum*, and *O. cirrhosum* in its many varieties. There were at the time quite as many more spikes coming on as those already open. The pale tints of these *Odontoglossums* were nicely lit up by the introduction amongst them of the best high-coloured kinds of *Masdevallia*. In the whole range of plants grown for the production of cut flowers, there are none to beat, and very few to equal *Odontoglossums*, not only for the length of time the individual flowers last, but also for the succession of bloom that can be had where a sufficient number are grown. Here they are in flower more or less the whole year round, but the greater number are in from the commencement of the year up to the end of August. The night temperature is kept at near 55° through the summer months as it can be, and never allowed to run above 5° or 10° higher than this in the day when the weather is such

that it can be avoided by the aid of shade and water. The front ventilators, and often the doors as well, are open continuously, unless when there is frost or cutting winds.

— THE Messrs. Carter and Co., of Holborn, have in cultivation, under the name of CHOU DU RUSSIE, a very pretty Kale, which appears to be not only distinct but desirable as a novelty. The leaf is very much cut into small segments, the habit of the plant being well shown in the small subjoined woodcut borrowed from the *Gardeners' Chronicle*,



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which is one-sixth its natural size. Messrs. Carter state that this Kale, besides being ornamental, is very hardy, not a single plant having been lost during the past severe winter.

— MR. F. TOWNSEND has recently published a tabular list of the plants composing the FLORA of HAMPSHIRE, together with comparative lists, showing the presence or absence of Hampshire plants in the adjacent counties. Excluding maritime or coast plants, it is shown that Hants possesses 77 species not found in Sussex, 136 absent from Surrey, 91 from Dorset, 193 from Wilts, 153 from the Isle of Wight, and 203 from Berkshire. Hampshire, says the author, would seem to have been one of the great battlefields of floras, which wended their slow steps from east and west, north and south, and such plants as *Rhynchospora fusca*, *Dianthus prolifer*, &c., may be looked on and held in reverence as great warriors of those days when the strife was hottest—who have outlived their weaker brethren, but are destined soon to lay down their arms and lives, and find their graves beside them.

— AMONGST the Lilies at Weybridge, Mr. G. F. Wilson informs us in the *Gardeners' Chronicle* that he had on the 9th ult. a large pot of *LILIUM KRAMERI*, with sixteen flowers out and two buds, three of the stems having three flowers each. The tallest stem is 4 ft. from the top of the pot. There are several shades of colour in the flowers. "This is by far the finest pot of the Lily I have yet seen; but probably as the bulbs get bigger, we shall have still stronger growth with more flowers to a stem."

— THE Rev. F. D. Horner thus succinctly sets forth the distinguishing characteristics between the ALPINE AND SHOW AURICULAS.

"Alpines" is a loose term here, some alpines being in themselves show sorts, while others are mere common border flowers. Show Alpines differ from the countless border varieties in being flat, circular, bright, substantial, richly shaded flowers of medium size, inclining to large, with round centres of rich gold or lemon to cream-yellow, and utterly free from the slightest deposit of meal thereon. The tube is generally of the same colour as the yellow centre; and the anthers are round the mouth, with pistil at the bottom, constituting the legitimate "thru-eye," the contrary of the "pin-eye," where the pistil is awkwardly uppermost. It is impossible to define what are not show alpines, for they vary in every conceivable manner and degree from the standard properties; generally in being rough and flimsy and coarsely large, not so often failing in brilliancy of tints, and very often indeed in being dashed and dowed with sprinkled white meal upon their centres (desperate mongrels these), and, of course, also in being often pin-eyed. The show alpine is distinct enough from the green-edged, grey-edged, and white-edged Auricula, and only a very undiscerning eye could confound it with the one remaining class, the show selfs, that, like the alpines, possess no edge of pure or powdered green. The alpine proper is a shaded flower, the self has but one rich colour. The centre of the alpine is a zone of gold or lemon, and that of the self is densely overlaid with pure white meal. The foliage of the self is green, or half or fully mealed; but, he adds, I do not know any show alpines of other than a green habit, though, in common border sorts, I have seen attempts at alpines with their grass mealed.

— A CORRESPONDENT of the *Garden* specially commends the use of LIME-WATER as a means of destroying slugs. The plan is to mix hot lime and water, and after well stirring it, to let it stand until all the lime has settled at the bottom, and then to use the water in the evening with a watering-pot fitted with a good rose. The following morning hundreds, if not thousands, of dead slugs will be found, some of them as small as the top of a pin, which the lime-water thus applied has killed on the leaves and about the plants where the powdered lime would never have reached them. Dry lime only does half the work. The watering should be applied the last thing, wherever there is danger of the sun striking on the plants.

Obituary.


— MR. THOMAS HUBBERSTEY, gardener to O. O. Wrigley, Esq., of Bridge Hall, Bury, Lancashire, died on June 23rd, after a painful and protracted illness. He was for some fourteen years with Mr. Wrigley, whose far-famed collection of plants, especially Orchids, Pitcher-plants, and Ferns, reared under his care, has had few equals, and have never been surpassed. He was a thorough enthusiast, who went heart and soul into the cultivation of whatever he took in hand; a close observer of the nature and requirements of cultivated plants, ever trying the effects of anything new in the way of treatment that occurred to him as likely to be beneficial, and always ready to impart to others the result of his success or failure. How he succeeded is well known to many of those who own or cultivate the leading collections of these plants in this country.



Canna iridiflora var.

CANNA IRIDIFLORA HYBRIDA.

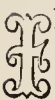
[PLATE 497.]

HE old *Canna iridiflora*, a species of noble character, remarkable for the size as also for the distinct form and character of its flowers, is now rarely met with, though of the many forms which are known it is one of the most worthy of cultivation. The plant which we here figure has been latterly grown under this name, and is probably of hybrid origin, with *C. iridiflora* as one of its parents, the peculiar form of the flower, indicating this relationship. It formed one of a very interesting and extensive series of Cannas grown last year at Chiswick by Mr. Barron, to whom we are indebted for the specimens figured, and of which both Mr. Fitch and Mr. Severeys have assisted in producing a very

faithful portrait, so far as a fragmentary representation can do justice to so noble a plant.

This *Canna* is particularly suited for greenhouse and conservatory decoration. It may either be cultivated in pots of rich loamy soil, or planted out in the beds, the roots in the latter case being probably all the better for being rested in winter by taking them up and storing them in a moderately dry place. If grown in pots, the resting can be effected by reducing the winter supply of water; but the desiccation should not be carried so far that the tuberous masses lose their plumpness. They can be started or replanted in spring, and will come into flower during the late summer and autumn.—T. MOORE.

THE BEST GARDEN CABBAGES.

N the last issue of the *Journal of the Royal Horticultural Society* (vol. v., part 8), we find a valuable report, by Mr. Barron, on the Cabbages grown for trial at Chiswick in 1877-8, in which 187 distinct samples, under 150 different names, were subjected to two examinations, the seeds in the one case being sown in March, so that the Cabbages came into use in the autumn, and in the other case in July, so that they came into use early in the following summer. Omitting the Field Cabbages and the Red Cabbages, and confining our attention to the garden varieties, we find that these were reduced to 21 typical forms, of which Nos. 1 to 8 in the following abstract are indicated as those best adapted for sowing in the spring; and Nos. 4, 5, 9, and 10 for sowing in autumn, the former to furnish a supply in autumn, the latter in spring and summer. Of these, Nos. 2, 5, 6, 7, and 8 are those most strongly recommended.

1. ATKINS'S MATCHLESS.—A dwarf compact variety, growing about 9 in. high, the leaves crumpled, of a deep green colour, and forming a small, tapering, firm, solid heart. An excellent small early variety for autumn use.

2. EARLY YORK. *Syn.*: Small Oxheart; *Selections*: Superfine Early, Tom Thumb Early Dwarf, Early Dwarf York.—A small, compact variety, with deep green erect leaves, averaging

No. 21. IMPERIAL SERIES.

10 in. to 12 in. in height, having a heavy bloom; the heart small, ovate, firm, and quickly formed. A distinct type, excellent for summer and autumn use, to be sown in spring.

3. HARDY GREEN COLEWORT. *Syn.*: Large Green Colewort.—A compact-growing variety, of very fine quality, about 12 in. high, with deep green red-tinged leaves, and late slowly-formed, medium-sized, broadly-conical hearts. It is very hardy, and excellent for late autumn use; should be sown in May, and planted out thickly as Coleworts for autumn and winter.

4. LITTLE PIXIE. *Syn.*: Oxheart Early, Cœur de Bœuf Petit, Normandy, Early Normandy. *Selections*: Louviers, Précoce de Louviers.—A very small, close, compact, light green variety, averaging about 8 in. high. The leaves are short and smooth. The hearts form very early, and are of excellent quality. Sown in spring, planted 15 in. apart, it yields a good late summer and autumn crop.

5. NONPAREIL. *Selections* — *early*: Dwarf Early, Carter's Heartwell, Heartwell, Wheeler's Imperial; *smooth-leaved*: Cocoa-nut, Wheeler's Cocoa-nut, Monarch, Oliver's Monarch.—A dwarf close-growing variety, seldom exceeding 12-in. in height, with light-green somewhat crumpled leaves, and early-formed, firm, solid hearts, of excellent quality. "One of the most

K

esteemed of cabbages for general use, not quite so large as Enfield Market, but of much the same character."

6. *ROSETTE COLEWORT.* *Syn.*: Rose Colewort.—Small and compact, with a very distinct style of growth; the deep green leaves tipped with rose, cupped or incurved, and hooding over the heart, thus forming a flat or square top. Much esteemed in the London Market Gardens. It should be sown in May, and planted out about 15 in. apart, for use in autumn as Coleworts or small cabbages, but is inferior, if sown at other seasons.

7. *ST. JOHN'S DAY.* *Syn.*: St. John's Day Drumhead, St. John's Day Early Drumhead, Chou Joannet. *Selections*: St. John's Day Late Drumhead, St. John's Day Early, Large St. John's Day, Drumhead Early Dutch.—A very dwarf variety, the plant entirely resting on the ground, seldom exceeding 6 in. or 7 in. in height, and about 18 in. to 20 in. in breadth; the leaves deep green; the hearts broad, flat, solid, crisp, and tender. One of the very best Cabbages for autumn use. Sow in April, and plant out 15 in. apart.

8. *COUVE TRONCHUDA.* *Syn.*: Tronchuda, Portugal, Braganza, Couve Pucco.—A medium-sized variety, growing on short, thick stems; the leaves large, pale green, with pure white ribs; the hearts irregularly formed, sometimes solid. "Of excellent quality; the fleshy midribs of the leaves are the only parts eaten, being cooked like Sea-kale. The plant is somewhat tender, and requires to be sown early in spring, for use in autumn; flowers white."

9. *ENFIELD MARKET.* *Selections* — *early*: Sprotboro', Raymeadow, Improved Cabbage;

large late: Daniel's Defiance, Early Battersea, Wright's Market, Harrison's Victoria, Victoria, Plaw; *ordinary stocks*: Blenheim, East Ham, David's No. 1, Myatt's Early, Large Nonpareil, McEwen's Early, Kemp's Incomparable, Early Rainham, Cattell's Reliance, Vanack.—A large, short-stemmed variety, with broad, bright-green leaves, and large, solid, crisp, tender hearts. "This is the great London Market Cabbage, and the one most generally cultivated throughout the country under many names, which differ only in proportion to the purity of stock, and early or late selections. Formerly it was better known as Vanack, subsequently Fullham or Battersea, but at the present time Enfield Market is the best known."

10. *WINNIGSTADT.* *Syn.*: Early Winnigstadt.—A medium-sized, short-stemmed variety, with large, deep green, fleshy leaves, carrying a heavy bloom, and forming broad, conical, solid hearts, of excellent quality. A very distinct and excellent cabbage for late summer and autumn use; should be sown in August, or very early in spring.

Mr. Barron adopts 17 typical varieties of garden cabbages, as being at present in cultivation, and these he arranges in three groups, according to their seasons, as follows:—

Early.—Atkins's Matchless, Early Boulogne, Early York, Little Pixie, Nonpareil, St. John's Day, Sugar Loaf.

Mid or General Season.—Enfield Market, Large York, Prompt de St. Malo, Tournalville, Rosette Colewort, Winnigstadt.

Late.—Bacalan, Hardy Green Colewort, Pomme d'Orion, Pomeranian.—M.

ODONTOGLOSSUM VEXILLARIUM.

IF all probability no one genus of flowering plants is destined to hold a more permanent place in heated glass structures than the family of Orchidaceous plants known as *Odontoglossums*. They are highly prized in the gardens of the wealthy, and they are just as much admired by those whose means will only allow of their having a tiny orchid-house in which to grow them. The plants in question require very little artificial warmth, and provided they are kept cool and moist, there is scarcely any difficulty attached to their successful culture. A temperature resembling that of

an ordinary May day is all they require,—moist cool, refreshing, balmy. On a hot day the temperature in a properly constructed *Odontoglossum-house* is about as pleasant a place as one can find in order to escape the great heat one sometimes has to bear in the summer; since the ventilation and evaporation just balancing one another, cause the temperature to feel deliciously cool and refreshing.

The subject of the present illustration, *Odontoglossum vexillarium*, requires a temperature not falling below 55°, nor rising above



ODONTOGLOSSUM VEXILLARIUM.

[This lovely Orchid varies in the colour of its flowers from the faintest blush to the deepest rose.]


65°, summer or winter ; neither can it endure a close atmosphere. Nearly all the failures in the attempted cultivation of this most beautiful *Odontoglossum* have been brought about by keeping the plants in a close atmosphere. It requires as much air as any intermediate stove-plant ; and if placed in a shady part of the house, will grow as freely as other stove-plants.

The material which seems best suited to its root requirements is good fibry brown peat, broken up to about the size of small walnuts, mixed with sphagnum moss, and with a dash of coarse silver sand ; this placed over a very liberal drainage of potsherds broken small.


Odontoglossums should never be potted in hot weather. The latter end of October is about

the best time. When established, these plants greatly dislike to be disturbed, and they take a long time to re-establish themselves, especially if they are moved in hot weather. They should not, at any rate, be allowed to get dry, neither should they be kept sopping wet, but the sphagnum in which they are growing should always be kept healthy-looking; thus in order to meet their requirements, they should be looked over three or four times a day, so as to let them have water just when they require it, so as neither to keep them waiting nor to give it before they do want it. When the outside temperature is 55° or above, the *Odontoglossum* in question, as well as all the others, requires plenty of air, night as well as day. If the above points are attended to, insects will give very little trouble. A light, careful syringing with soapy water occasionally is all that will be required.—WM. DENNING, *Coombe Lane, Kingston-on-Thames.*

THE BEST STRAWBERRIES.

 HIS important crop has probably been heavier this season than for many years, as we know of old, neglected beds which have been heavily laden with fruit, though they have not previously had a berry on them for years. It is a question of importance to decide which are the kinds of greatest usefulness when such cold wet seasons like the present are experienced. With ourselves we would put Vicomtesse Héricart de Thury first and foremost. It began to bear among the first, carried immense crops—on some plants about 200 fine fruit were counted—stood the wet better than any, and lasted in fruit-bearing to the middle of August. Sir Joseph Paxton has been very fine and abundant, standing well against the wet. Sir Harry has done capitally, having also stood the wet extra well. Deeply-trenched land and plenty of distance between the plants are primary conditions of success.—M. T.

THE MULBERRY.

 HIS free-bearing fruit-tree seems to be altogether lost sight of by the gardeners of our time. We nowhere see Mulberries forming a dish among collections of fruits, and seldom hear their name mentioned as belonging, in any way, to the garden. The generations which have gone before, had evidently

been at great pains to get Mulberries introduced into England, for we read of the trees preserved in the gardens and pleasure-grounds of the religious houses before the dissolution of the Monasteries, in the sixteenth century. Forsyth, who wrote his book on Fruit-trees about 1803, says there were then four large Mulberry trees standing in the pleasure-ground at Syon House. In my time, in 1837, there was only one of these left, and that was propped up to keep it from falling, but still it bore heavy crops of excellent fruit. Forsyth states that the Duke of Northumberland reckoned these Mulberry trees at Syon House to be 300 years old, and that was nearly 100 years since. The Priory, Stanmore, formerly a religious house, had also some ancient Mulberry trees; and John Browning, Esq., of Chelsea, is named as possessing one of the largest Mulberry trees that Forsyth had ever seen. Gerard is quoted as stating that Mulberry trees grew in sundry gardens in England in 1597, and on the lawn in front of the house of John Grove, Esq., at Little Chelsea, Forsyth operated upon four old Mulberry trees, by trimming them and applying his composition, and thus getting them into a bearing state the second year.

It is therefore evident that the Mulberry was duly cultivated in various localities, and especially within the grounds of the religious houses; and as these seats of learning communicated with each other, the knowledge of such an important article as a Mulberry tree, bearing heavy crops of delicious fruit, would not be hid. The cultivation and preservation of fruit certainly came within the spirit of the monastic institution, for we have the dried apples of Norfolk (Norfolk Beaufins) still to be seen and tasted; and when I visited the Monastery of Grace Dieu, in Lincolnshire, I was shown their fruit garden, and was told that they cultivated fruit zealously for the use of the house, and they thankfully received some Strawberry plants which I sent them from Alton Towers, to improve the breed of that useful fruit. They had one brother who attended to the garden.

There are few of the blessings that we have received from a kind Providence so delicious to the taste as the fruit of the Black Mulberry, and that seems to be the only species of any use for dessert. Under the fiat of creation, the

Mulberry would surely be one of which our first parents "might freely eat;" and it has extra good properties in the way of coming in succession and ripening by degrees. When I had shaken the old tree in Syon House grounds, the ripe fruit only fell to the ground, which, being in lawn grass, did not soil them; and I could picture to myself our first parents in Eden, Adam shaking the tree, and the "mother of all living" gathering the berries in a vine-leaf.


The Mulberry is of the easiest culture, for it strikes readily from cuttings of the young wood, and soon forms a small tree, but after it gets into a bearing state it exhausts all its strength in bearing fruit. Its character for longevity is marvellous, for it would only be a young tree when the oak had braved the storms of a hundred winters. There is little doubt that the remnants left around the religious houses are older than the Reformation, when they changed owners, and from the scattered specimens which we read of, or which we have seen, it is clear that "the dull destroyer"

had not spared the Mulberry tree when he levelled the mansion; indeed, how could anything be protected, when the very walls were battered with cannon, and the inmates who claimed kindred there got licences to beg? These heads of houses were the botanists and gardeners of the time, and they must have grieved, among other losses, to see their fair gardens and fruitful trees destroyed. The oak, the ash, and the elm trees might hold their own against the force of cannon-shot, but the Mulberry is all too weak and lowly to withstand ill-usage; and the tiny tree, unnoticed and unknown, would be faggoted for fuel, amid the "top and lop" of more valuable timber.

It is, therefore, no doubtful experiment to grow Mulberries, for surely 300 years is enough to satisfy any one that the thing is feasible; and let us hope that the time to come may be halcyon days, as compared with the stormy ages that English Mulberry trees have passed through.—ALEX. FORSYTH.

THE NATIONAL CARNATION AND PICOTEE SOCIETY:

SOUTHERN SECTION.

T South Kensington on August 12th, a date late beyond precedent for a show of Carnations and Picotees in the London district, this Society held its third annual exhibition since its revival in the South, and we have great satisfaction in recording it was undoubtedly the best. Late, however, as was the date, so abnormal have been the conditions of the season and so slow and dragging the development of the flowers, that many competitors who last year contributed materially to the display were unable on this occasion to take any part, even to the extent of joining in the competition for the prizes in the classes for single specimens, and thus the number of the competitors and the extent of the exhibition were considerably diminished.

But though diminished in extent, there was no lack of quality, and the less crowded state of the tables permitted a far more effective display of the flowers than was the case last year, when, from the number of specimens brought forward without sufficient notice, a degree of crowding quite destructive to general effect was inevitable. This year the exhibitors appear to have more perfectly performed their initiatory duties, and thus due preparation was possible by the executive, and everything went forward smoothly and in order.

Above, we have said we believe the exhibi-

tion to have been the best the Society has yet held, and no one who, like ourselves, had opportunity to study the magnificent collections contributed by Mr. Charles Turner, Mr. James Douglas, and Mr. E. S. Dodwell, would, we think, have questioned this conclusion. We heard on some sides an expression of opinion that Mr. Douglas, who fell into second places, was scarcely up to his usual grand form, but with this opinion we could not concur. Rather, as we thought, it was Mr. Turner and Mr. Dodwell who had surpassed former efforts. At any rate, we know it was only after long examination, and a patient analysis of minute, though not unimportant, points, that the decisions were arrived at, and we heartily concurred in the expressed opinion of one of the competitors, uttered after the awards of the judges, that "three grander collections both in Carnations and Picotees had never been staged." Other collections of great merit were shown by Mr. Hines, of Ipswich; Mr. Job Mathews, of Wandsworth Road, S.W., a gentleman who entered the arena of competition in these flowers, for the first time, we believe, on this occasion, and who made a very respectable first appearance indeed, winning fourth prizes both in Carnations and Picotees, against competitors of long standing and undoubted powers; Mr. George Rudd, of Bradford,

who had by patient effort, continued from early February, advanced his flowers for the occasion, quite a month in advance of a normal season in his locality; and Mr. Buttrum, of Woodbridge. Mr. Arthur Medhurst again carried off first prizes in the six-blooms classes, Mr. W. H. Dodwell being a good second, and Mr. Burnaby-Atkins third. Mr. Catley, of Bath, and Dr. Abercrombie, of Cheltenham, failed to get places in the 12-blooms classes for Carnations, but won honours in good style in the classes for Fancies, Miscellaneous, and Selfs, 24 blooms and 12 blooms respectively. In this class—miscellaneous, selfs, and fancies—the 24 blooms produced by Mr. Turner were marvellous examples of culture and artistic management, and however originated, this great innovation on the practice of our floricultural fathers deserves, we think, the highest praise, for whilst it contributes to the illustration of the character of the genus, it forms beyond question one of the most popular elements of the show, and is gorgeously delightful in colour. Mr. Douglas was a good second, and Mr. Hooper, of Bath, contributed good examples, but sadly exemplifying the want of a tasteful eye and delicate touch in their setting-up. In the 12-bloom class—from which the competitors in the 24's were excluded—Mr. Dodwell showed a fine stand, mainly seedlings, and was well supported by the gentlemen whose names are given in the report of the awards. In a future number, we hope to get from our friend, Mr. Dodwell, a full report of the varieties which have been in fine character during the season, and now, therefore, we give simply the awards of the Judges: Mr. Robert Lord, Todmorden; Mr. John Fraser, Lea Bridge; Mr. J. T. D. Llewelyn, Ynisgerwn; and ourselves, in the open classes; Mr. Charles Turner, Mr. Harry Turner, and Mr. John Ball in the amateurs' division; and Mr. Ben Simonite and Mr. Kirkland, for the single specimens in classes.

For the advantage of those of our readers who may be interested in the study of the composition of the collections, a study very interesting and informing to many, we give a full report of the three first collections, premising that Mr. Turner's were shown in boxes of four sixes, Mr. Dodwell's and Mr. Douglas's in

boxes of three lines of eight each. The report commences with the flower at the left of the top line, and reads in each case from left to right.

CARNATIONS.

Class A. 24 blooms, not less than 12 dissimilar.—Equal, 1st, to Mr. Charles Turner, Royal Nursery, Slough, and Mr. E. S. Dodwell, 11 Chatham Terrace, Larkhall Rise, Clapham, S.W. Mr. Turner's flowers were Sibyl, R.F., ex, ex—the premier bloom of the show—Bairdsley Hero, P.P.B.; Florence Nightingale, P.F.; Mrs. Brown, pale R.F.; Sibyl, R.F.; G. F. Wilson (Dodwell), P.F., a new flower, bright crimson purple, but wanting purity in the white; Squire Trow, P.F.; Mars, S.B.; Clipper, S.F.; Sporting Lass, P.F. (a sport from Sarah Payne, P.P.B., a lovely new style of P.F.); Bairdsley Hero, P.P.B.; John Keet, R.F.; James Taylor, P.P.B.; Clipper, S.F.; Florence Nightingale, P.F.; Sibyl, R.F.; Mayor of Nottingham, P.F.; Clipper, S.F.; Mars, S.B.; J. D. Hextall, C.B.; John Keet, R.F.; Graceless Tom, C.B.; Admiral Curzon, S.B.; and Rifleman, C.B. Mr. Dodwell's flowers were, Unexpected, P.P.B.; Dreadnought, S.B.; Captain Stott, C.B.; James Douglas, P.F.; Mars, S.B.; James Merryweather, R.F.; Charles Turner (Dodwell), anew and promising S.B., full of rich colours and markings; James Douglas, P.F.; Clipper, S.F.; Wm. Murray, C.B.; Sibyl, R.F.; Unexpected, P.P.B.; James Merryweather, R.F.; J. D. Hextall, C.B.; Florence Nightingale, P.F.; Crista-galli, R.F.; Sarah Payne, P.P.B.; Annihilator, S.F.; Admiral Curzon, S.B.; Squire Trow, P.F.; Unexpected, P.P.B.; Seedling, S.F.; J. D. Hextall, C.B.; and Seedling, S.B. 2nd, Mr. Douglas, who had Mars, S.B.; Sibyl, R.F.; James Taylor, P.P.B.; J. D. Hextall, C.B.; Sporting Lass, P.F.; Rifleman, C.B.; Squire Meynell, P.F.; Mars, S.B.; Juno, P.F.; Sarah Payne, P.P.B.; Admiral Curzon, S.B.; James Douglas, P.F.; John Simonite, C.B.; Sibyl, R.F.; Admiral Curzon, S.B.; John Keet, R.F.; John Bayley, S.F.; Lord Milton, C.B.; John Keet, R.F.; Sportsman, S.F.; Falconbridge, P.P.B.; Annihilator, S.F.; James Taylor, P.P.B.; and Sportsman, S.F. 3rd, Mr. Hooper, Bath.

Class B. 12 blooms, dissimilar. Open to amateurs only.—1st, Mr. E. S. Dodwell, with Mr. Llewelyn (Dodwell), a new C.B. or P.P.B., of good habit, markings, and size, very promising; Dreadnought, S.B.; James Douglas, P.F.; John Keet, R.F.; Robert Lord (Dodwell), a new S.B., something between Dreadnought in its best character and Curzon, and which we thought the best flower in the exhibition; Florence Nightingale, P.F.; John Ball (Dodwell), S.F., a seedling of this year; Mars, S.B.; George Rudd, C.B., another seedling of 1879, fine in form and colour; Sportsman, S.F.; J. D. Hextall, C.B.; and James Merryweather. 2nd, Mr. James Douglas, with Sibyl; J. D. Hextall, Juno, Falconbridge, P.P.B.; Campanini, S.B.; Squire Meynell, Sarah Payne, John Bayley, John Keet, Rifleman, Annihilator, and Admiral Curzon. 3rd, Mr. Hines, Ipswich, who had good examples of Lord Raneliffe, S.B.; John Keet, Sarah Payne, James Douglas, Ajax, P.F.; Christopher Sly, S.F.; Eccentric Jack, C.B.; Sportsman, Sibyl, Sir Joseph Paxton, S.B.; James Merryweather, and J. D. Hextall. 4th, Mr. Job Matthews, 439 Wandsworth Road, S.W., in whose stand, in addition to flowers previously enumerated, we noted fine specimens of Mrs. Dodwell, R.F.; Mayor of Nottingham, P.F.; James Douglas, and Crista-galli. 5th, Mr. George Rudd, Undercliffe, Bradford; and 6th, Mr. S. C. Buttrum, Burgh Mills, Woodbridge. Dr. Abercrombie, of Cheltenham, and Mr. Catley, of Bath, also competed in the class.

Class C. 6 blooms. Open to amateurs not competing in Class B.—1st, Mr. Arthur Medhurst, Priory Road, Wandsworth Road, S.W., with James Douglas, Sibyl, Annihilator, J. D. Hextall, Admiral Curzon, and Sportsman. 2nd, W. H. Dodwell, Esq., 320 South Lambeth Road. 3rd, T. F. Burnaby-Atkins, Esq., Halstead Place, Sevenoaks, Kent.

Class D. Single specimens, in classes.—*Scarlet Bizarres*: 1st, Mr. Douglas, with Admiral Curzon. 2nd, Mr. Dodwell, with Seedling (1879). 3rd, Mr. Dodwell, with Admiral Curzon. 4th, Mr. Dodwell, with True Briton. 5th, Mr. Dodwell, with Admiral Curzon.—*Crimson Bizarres*: 1st, Mr. Turner, with J. D. Hextall. 2nd, Mr. Turner, with Seedling (Dodwell). 3rd, Mr. Douglas, with Seedling (Simonite). 4th, Mr. Douglas, with Rifleman. 5th, Mr. Dodwell, with Seedling.—*Pink and Purple Bizarres*: 1st, Mr. John Hines, with Sarah Payne. 2nd, Mr. Douglas, with Sarah Payne. 3rd and 4th, with James Taylor. 5th, with Sarah Payne.—*Purple Flakes*: 1st, Mr. Turner, with Squire Trow. 2nd, Mr. Dodwell, with James Douglas. 3rd, Mr. Douglas, with Squire Meynell. 4th, with Juno. 5th, Mr. Dodwell, with True Blue.—*Scarlet Flakes*: 1st and 2nd, Mr. Turner, with Clipper. 3rd and 4th, Mr. Douglas, with Sportsman. 5th, with John Bayley.—*Rose Flakes*: 1st and 2nd, Mr. Turner, with Sibyl. 3rd, with John Keet. 4th, Mr. Dodwell, with Sibyl. 5th, Mr. Douglas, with Sibyl.

Premier Carnation, selected from the entire exhibition Sibyl, exhibited by Mr. Charles Turner.

PICOTEES.

Class E. Open, 24 blooms, not less than 12 dissimilar.—1st, Mr. Charles Turner, Royal Nursery, Slough, with Her Majesty, light purple-edged; Emily, medium red-edged; Lady Baston, scarlet-edged; Her Majesty; Dr. Abercrombie, heavy red-edged, new and good; Lily of the Valley, light purple-edged; Dr. Abercrombie; Mrs. Alleroff, light rose-edged; Constance Heron, medium scarlet-edged; Lady Baston; Baroness Burdett Coutts, medium purple-edged; Emily; Emily; Horace Mayor, heavy red-edged; Mrs. Alleroff; Dr. Abercrombie; Lucy, light scarlet-edged; Zerlina, heavy purple-edged; Leah, heavy purple-edged; Empress Eugénie, light scarlet-edged; Rev. J. B. M. Camm, heavy purple-edged, very broad; Baroness Burdett Coutts; Miss Frowd, heavy red-edged; and Her Majesty, light purple-edged. 2nd, Mr. E. S. Dodwell, with Zerlina; Royal Visit, heavy rose-edged; Minnie, light purple-edged; Novelty, bizarre pink and lilac-edged; Beauty of Cheltenham, heavy purple-edged; John Smith, heavy red-edged; Royal Visit; Lizzie, heavy purple-edged; John Smith; Rev. F. D. Horner, light red-edged; Edith Dombrain, heavy rose-edged; Mrs. Summers, heavy purple-edged; Cynthia, light purple-edged; Seedling, rose-edged; Alice, medium purple-edged; Fanny Helen, scarlet-edged; Mrs. Summers; Morna, heavy red-edged; Lady Louisa, heavy scarlet-edged; Zerlina, Alliance, heavy purple-edged; Lady Louisa; Ann Lord, light purple-edged; and Brunette, heavy red-edged. 3rd, Mr. Douglas, with Zerlina, Minnie, Obadiah, Thomas William, light red-edged, Brunette, Ethel, Norfolk Beauty, Mrs. Bower, Ethel, Edith Dombrain, Mrs. Douglas, Edith Dombrain, Mrs. Payne, medium scarlet-edged, selected as the best picotee of the whole exhibition, Minnie, Estelle, Mrs. Dodwell, Zerlina, Clara, Princess of Wales, Ann Lord, Norfolk Beauty, Violet Douglas, Lady Louisa, and Minnie. 4th, Mr. George Rudd, Undercliffe, Bradford. 5th, Mr. H. Hooper, Bath.

Class F. 12 blooms, dissimilar. Open to amateurs only.—1st, Mr. E. S. Dodwell, with Zerlina, Edith Dombrain, John Smith, Royal Visit, Mrs. Alleroff, Mrs. Dodwell, Alice, Mrs. Summers, Alliance, Lady

Louisa, Ann Lord, and Brunette. 2nd, Mr. James Douglas, with Ethel, Morna, Nymph, Queen Victoria, light rose-edged, Mrs. Douglas, Estelle, Edith Dombrain, Mrs. Bower, Thomas William, Zerlina, Ann Lord, and Mrs. Dodwell. 3rd, Mr. S. C. Buttrum, Burgh Mills, Woodbridge, with Ada, Colonel Clarke, Zerlina, Edith Dombrain, Norfolk Beauty, Juliana, Mary, Nymph, J. B. Bryant, Lavinia, Miriam, and Princess of Wales. 4th, Mr. Job Matthews, Wandsworth Road, S.W. 5th, Mr. John Hines, Ipswich. 6th, Mr. Catley, Bath.

Class G. Six blooms, dissimilar. Open to amateurs not competing in Class F.—1st, Mr. Arthur Medhurst, Priory Road, S.W., with Miss Wood, Mrs. Lord, Morna, Ann Lord, Mrs. Summers, and John Smith. 2nd, W. H. Dodwell, Esq. 3rd, T. F. Burnaby-Atkins, Esq.

Class H. Single blooms in classes—open.—*Red, heavy-edged*. 1st, Mr. Turner, with Dr. Abercrombie. 2nd, Mr. John Hines, with Princess of Wales. 3rd, Mr. Dodwell, with John Smith. 4th, Mr. S. C. Buttrum, with Colonel Clarke. 5th, Mr. Douglas, with John Smith.—*Red, light-edged*: 1st, Mr. Douglas, with Violet Douglas. 2nd and 3rd, Mr. Turner, with Emily. 4th, Mr. Douglas, with Mrs. Bower; and 5th, with Thomas William.—*Purple, heavy-edged*: 1st, Mr. Turner, with Mrs. A. Chancellor. 2nd, Mr. Buttrum, with Norfolk Beauty. 3rd, Mr. Douglas, with Alliance. 4th, Mr. Dodwell, with Zerlina. 5th, Mr. John Hines, with King of Purples.—*Purple, light-edged*: 1st, Mr. Douglas, with Minnie. 2nd, Mr. Turner, with Her Majesty. 3rd, Mr. Dodwell, with Ann Lord. 4th, Mr. Douglas, with Ann Lord. 5th, Mr. Turner, with Her Majesty.—*Rose, heavy-edged*: 1st, Mr. Turner, with Royal Visit; 2nd, with Lucy; 3rd, with Mrs. Payne. 4th and 5th, Mr. Douglas, with Edith Dombrain.—*Rose, light-edged*: 1st, Mr. Turner, with Mrs. Alleroff. 2nd, with Miss Wood. 3rd, Mr. Buttrum, with Miriam, extra fine petal. 4th, Mr. Turner, with Miss Wood. 5th, Mr. Douglas, with Estelle.—*Yellow-Grounds*: 1st and 2nd, Mr. Turner, with Prince of Orange. 3rd, Mr. H. Hooper, with Mrs. Frampton. 4th, Mr. Douglas, with King of Yellows; 5th, with Prince of Orange.

Premier Picotee, selected from the entire exhibition—Mrs. Payne, heavy rose-edged; exhibited by Mr. Douglas.

No fewer than 267 single blooms were shown in the classes D and H, besides various boxes, which could not be shown for want of bottles, a lack the Society should remedy.

MISCELLANEOUS: SELFS, FANCIES, AND YELLOW-GROUNDS.

Class I. 24 blooms, not less than 12 dissimilar.—1st, Mr. Charles Turner, Royal Nursery, Slough, with Heather Bell, Sibyl, Bride, Peter Stevenson, Flora's Garland, A. Alogatière, Unexpected, Coroner, Cremorne, Mayor of Nottingham, Admiral Curzon, Rosa Bonheur, Brilliant, Eccentric Jack, Prince Imperial, and Mars. 2nd, Mr. James Douglas. 3rd, Mr. H. Hooper. 4th, Mr. H. Catley. 5th, Mr. Job Matthews.

Class K. 12 blooms, dissimilar (exhibitors in Class I restrained from competing in this class).—1st, Mr. Dodwell, with fine flowers, mainly seedlings. 2nd, Mr. Arthur Medhurst. 3rd, Master Harry Matthews. 4th, Dr. Abercrombie.

Class L. 12 plants in pots, not exceeding 8 in., dissimilar.—1st, Mr. James Douglas, with 12 well-grown and admirably set-up specimens, of Satisfaction, Brunette, a purple-flake sport from James Douglas; Rose of Stapleford, Rival Purple, James Taylor, Clipper, Mrs. Nichol, Falconbridge, Norfolk Beauty, Milton, and Illuminator.

First-class Certificates were awarded to Mr.


Turner, for *Dr. Abercrombie*, a fine, new, and very distinct, heavy red-edged Picotee; also for *Baroness Burdett Coutts*, a medium, purple-edged, with a fine broad petal, and excellent habit, a very desirable variety, even in this already very rich class. Two other varieties shown by Mr. Turner also gained this honour, —*Heather Bell*, a large, fringed, pale pink, flower of the fancy class; and *Coroner*, raised by Mr. Barron at Chiswick, also of the fancy class, with a beautiful petal, very smooth, and of excellent contour; one of the indescribable shades of soft carmine-crimson which defy word-painting, and must be seen to be understood. Finally, Mr. T. S. Ware, of Tottenham, received a First-class Certificate for *Chromatella*, a clear, pale, yellow-ground Carnation, flecked and striped with white.

At 2 p.m. the Judges, exhibitors, executive, and friends joined in a modest luncheon, the

chair being filled by the excellent President of the Society, G. F. Wilson, Esq., and a very happy genial hour was passed. Mr. Shirley Hibberd, in response to the toast of "The Horticultural Press," demonstrated that the Carnation was the oldest florist flower known to cultivation; and when the toast "Continuance and prosperity to the National Carnation and Picotee Society, Southern Section," was proposed, the warmth of the response left no doubt as to the hold the Society had obtained in the affections of those present. The financial honorary Secretary reported that even in these sore days of depression and bad trade, the subscription list had been fully sustained, and a hearty desire, coupled with a confident belief, was unanimously expressed that the Society, under its excellent management, should long continue and prosper.—T. MOORE.

CHRYSANTHEMUM FRUTESCENS

COMTESSE DE CHAMBORD.

 NOTE on this variety of *Chrysanthemum* or *Argyranthemum frutescens*, which is one of the most popular of Parisian market-plants, has lately been published in the *Revue Horticole* (p. 268), where we learn that some specimens, which appeared at the Palais de l'Industrie, demonstrated that this common plant, so easy of culture as to be within everybody's reach, was able to compete in attractiveness with those which are considered to be the most ornamental, so that "although aristocratic by name, it is in its use a democratical plant in the full acceptance of the term." M. Poiret-Delan, gardener to M. Ledue, of Puteaux, who cultivated the examples which thus attracted so much attention, has given an account of his mode of cultivation, from which we abstract the following, premising that these plants are greenhouse shrubs, originally from the Canaries, and produce a profusion of elegantly-cut foliage, and of large, white-rayed composite flower-heads, not unlike those of our native Ox-eye Daisies.

This, writes M. Poiret-Delan, is how I operate:—I slip cuttings early in August, and repot about the beginning of October into small 4-in. pots. In the course of the winter, the pots are changed every time the roots carpet their sides, so that the growth is not hindered. This is essential, and on it depends

success in obtaining fine examples. The plants are placed in the open ground every year, after flowering, and must have copious and frequent waterings. In the autumn they are potted in pots proportionate to their strength, and taken in-doors before cold weather sets in. In winter they are kept in cold frames or greenhouses, and successively pinched-in up to February 1st, when they are repotted, so as to obtain a fine head of flowers.

One of the most important operations in order to obtain plants of large dimensions, is the pinching-in or topping. There is, however, nothing absolute about it, as it can be practised at divers times and at divers lengths, subordinated to the form one wishes to give to the plants; only it is important, and even obligatory, that the last pinching should be not later than the first days of February. As soon as the blooming is finished, the plants must be cut in, and the ball of earth more or less reduced, so as to remove a portion of the old roots. They are then to be planted in open ground, whence they are taken up and potted before the arrival of winter, as before.

It is thus that M. Poiret proceeded to obtain the three plants that he exhibited at the Palais de l'Industrie, which, although not then three years old, measured 7 ft. 4 in. in diameter, and 5 ft. 8 in. high, and were grown in large tubs of 20 in. across. The soil used consisted of a mixture of good garden earth, to which a considerable proportion of well-rotted good manure was added.—M.



Fitch et Regel del.

Gloxinias.

1. Duc de Cazes. 2. Comtesse de Flandre. 3. Coupe d'Hebe. 4. Nycthemèze.

NEW GLOXINIAS.

[PLATE 498.]



IF the Gloxinia as a decorative plant no word of praise is needed, as its merits are well known, and have been widely appreciated ever since the days when the old typical drooping-flowered *G. speciosa* and its red variety *rubra* were the only forms in general cultivation. Later on, the variations increased more rapidly, the most striking deviation from the typical form being the origination of *G. Fyffiana* as a seedling sport, this being the type of the now numerous erect regular-flowered varieties. Very great variation in colouring and marking has been secured in the later generations of seedlings.

The sorts figured in our plate belong to the erect-flowered type. Fig. 1, *DUC DE CAZES*, is a very beautiful variety of a novel style of marking, the whole of the light ground-colour being dotted with small purple spots, which become condensed into heavy blotches on the expanded limb-segments. Fig. 2, *COMTESSE DE FLANDRE*, is a more delicate flower of the

same spotted type, but without the heavy blotches of colour on the limb, the dotting being of a pleasing rosy-pink, and pretty evenly distributed. These two varieties were drawn by Miss M. Regel, from the collection of Mr. W. Bull. Fig. 3, *COUPE D'HÉBÉ*, belongs to another type, in which the limb is densely coloured, with a narrow even edging of white; the ground-colour is a very rich bright carmine-scarlet, contrasting well with the white edge, which is pure and clearly defined. Fig. 4, *NYCTHÉMÉZÉ*, is of this type, but with a ground-colour of rich bluish-purple, the white margin being also well-defined. These latter two were sketched by Mr. Fitch from Messrs. Veitch's collection. They are all varieties which can be commended as distinct and striking in colour and character, effective in appearance, and therefore suitable to be largely grown for decorative uses. *Duc de Cazes* and *Coupe d'Hébé* have both received Certificates at the exhibitions of the Royal Botanic Society.—T. MOORE.

THE GHENT STRAWBERRY EXHIBITION.



HE exhibition of Strawberries organised at the Casino of Ghent by the Cercle d'Arboriculture of Belgium, took place on June 29th. The exhibits were numerous, and were considered so much the more deserving, from having been produced under conditions which had not suffered them to attain perfection. The show was held in the hall of the Royal Agricultural and Botanical Society of Ghent, which was gracefully ornamented and full of fragrant perfumes. The fruits were arranged on an immense central table, while groups of flowering and foliage plants and of cut flowers served as decorations to the Casino. M. Victor Biebuyck, of Courtrai, showed a collection of Chinese Pæony flowers, worthy rivals of the Rose, obtained by him from seed, and some of which were remarkable for their perfect form and distinct colours. M. Fr. Burvenich, desirous of uniting the useful with the agreeable, showed by his Strawberries in pots the mode of preparation which these plants ought to undergo, if one wishes to ensure success in their culture. M. Ed. Pynaert-Van Geert's new Coleuses, amongst other subjects, were especially attractive. The jury, of whom M. Biebuyck

was president, awarded a silver-gilt medal to M. Fr. Burvenich, for the finest and most numerous collection of varieties of Strawberries; and silver medals to M. Léopold Haeck, Destelbergen, for the finest collection of twenty varieties; and to M. Victor Hage, Courtrai, for the finest collection of fifteen varieties. Various prizes were also given for smaller collections, shown in nine classes. Among the fruits exhibited very few were inferior; many were excellent, and a certain number exquisite in quality.

M. Haeck's list of twenty varieties included Mammoth, Lucas, Comte de Paris, Président, Rosebery, Brown's Wonder, Gweniver, Duke of Edinburgh (?), Théodore Mulié, La Reine, Madame Fournier, Bijou, White Pine-apple (?), Fillmore, Ananas, Black Prince, Elisa, Dr. Morère, British Queen, Prince Impérial; those marked with a note of interrogation being considered doubtful by the jury, which was composed of specialists and connoisseurs. All the fruits were beautiful, except those of two or three kinds, among which the *Dr. Morère* evidently came from sickly plants. M. Haeck's (1st prize) three dishes were fine and well-chosen, consisting of *Keens' Seedling*, an exquisite aromatic and scented Strawberry, the fruits exhibited being just in perfection; *Vicomtesse Héricart de Thury* (of which Garibaldi, Madame de la Tour Maubourg, Duchesse de Trévis, and even D'Erixe, doubtless by corruption, are synonyms), very fragrant, slightly acid, and quite ripe; and *Sir Joseph Paxton*, less fine, but solid and magnificent.

M. Victor Hage showed Crémont, Comte de Paris,

Belle du Midi, Belle Paule, Jucunda, Prince Impérial, Perfection, La Constante, Hélène Gloëde, Marguerite (?), British Sovereign, and some others. M. Mulié grows his Strawberry plants without shelter, and for this reason many of his fruits were far from having attained the desirable maturity. A certain number, however, were remarkable. *Maréchal MacMahon* is a fine variety as to taste, perfume, and colour; *Merveille* (not to be confounded with *Ananas Merveille*), is a superb and excellent fruit; *Phénomène* is better than fine; *Théodore Mulié* is very productive and very hardy; *Hélène Mulié* is distinguished afar off by its fine deep colour, an early variety of first quality. M. Mulié also exhibited several new seedlings whose good qualities were highly spoken of, but their insufficient maturity did not permit the jury to appreciate them. One of the novelties which was presented under the No. 1, was to bear the name *Rameau*; it is the issue of *Marguerite* (Le Breton), fertilised by *Maréchal MacMahon*, and has both good flavour and good looks, without being very red in colour. The variety named *Secrétaire Rodigas*, if it unites the qualities of its ascendants, says the reporter, will have a great future before it. M. Van Wambeke exhibited some remarkable dishes—superb *Mme. Ball*, a very early and very deeply-coloured variety; *Duc de Malakoff*, remarkable; *Théodore Mulié*, finer and riper than those from M. Mulié himself; some splendid berries of *Louis Vilmorin* and *Professor Pynaert*, $2\frac{1}{2}$ in. in diameter and 8 in. in circumference. The banquet which followed the exhibition was successful in all respects. (*Bulletin d'Arboriculture, &c.*)

POTATO MEMORANDA.

WE hope to learn from extensive potato-growers this season what kinds have stood the disease best. Here, after lifting a number of kinds, we find the Early Kidneys of sorts, American Rose, Grampian (a red-skinned variety of the Fortyfold type), Snowflake and Fortyfold as free as any; but all are touched more or less, though nothing like so bad as many I have seen in various parts of the country. On our heavy clay land I adopted a method of planting, which, though not new, has been very successful,—the crops being heavy, and the Potatos large and of excellent quality. The ground was ridged up roughly and exposed to frost. In April the bottom of the trenches were forked over, the Potatos planted, then covered with some fine siftings of ashes and trimmings of turf-edgings. The ridges were forked down over the tubers and rounded so as to form low ridges, no further earthing-up being done. While many around us were despairing of securing a Potato crop, the tops dying-off in many cases, and others not coming through the ground at all, ours, in these nests of ashes and turf, were all one could desire; the crop turned out of them clean, and the ground is much improved by the

porosity caused by the rough turf. The whole, after digging the Potatos, was trodden down and levelled for turnips, &c.—M. T.

PLANT DISEASES.

M. R. CORNU has recently published, in the *Comptes Rendus* of the French Academy, the results of his observations on the Plant Diseases caused by the attacks of certain microscopic fungi, to wit, the *Peronospora*, one species of which, the *Peronospora infestans*, has been pretty clearly proved to be the cause of the potato disease. One of these diseases—that of the Lettuce—and the remedy, have been briefly noticed at p. 48. M. Cornu reserves more complete explanations for publication hereafter, but has already in the work above referred to given a useful summary of the mode in which the parasites may be battled with.

First, in order to prevent the extension or local production of the parasite, the period of its existence should be noticed. In the case of those which occur early in the season, endeavour should be made to retard the crops until their disappearance; while with those which occur later on—*P. infestans*, for example—the crops (as of potatos) should be got up before their appearance. Infested leaves should be removed, so that the plant may not contaminate others; but should the entire plant be attacked by the disease, it should be got rid of at once, since it is a hot-bed of infection. This should be done with precaution, in dry weather, when there is neither wind nor dew. All seeds which may harbour the parasite should, without exception, be destroyed. In the case of *P. gangliiformis*, all Composite plants, such as *Cirsium arvense*, should be removed, and it is necessary to watch attentively such subjects as Chicory, Artichokes, &c., which may be considered as pest plants, and their cultivation, if necessary, must be given up.

All plants, or portions of plants, whether green or withered, infested by the *Peronospora* or its mycelium should be removed and destroyed. They should be plunged at once into a solution which destroys the parasite—chlorate of lime, sulphate of potassium, &c. The green portions left on the ground may, in damp weather, produce fresh spores, while the withered portions may contain resting-spores,

and so become a source of danger. They should therefore be entirely destroyed—either burnt, or deeply buried. In no case should they be used as manure, or as food for domestic animals, as is often done, for the resting-spores (oospores) do not lose their vitality or hurtful properties.

By following these instructions, which are general, and may readily be applied to a large number of vegetable parasites, it will be possible both to neutralise the centres of infection, and to prevent them spreading. The more valuable the crop, the more care should be given to their application.—M.



RIDGWAY'S HEDGE-CUTTING MACHINE.

IT is not always that a new implement can be honestly described as a decided improvement upon those which have previously been employed to effect the same object, but this new form of Hedge-shears will be as great an acquisition for the trimming of hedges, as in its day was the mowing-machine for the cutting of grass-lawns. From trials which we have witnessed we are quite convinced that it may be depended on to do its work not only easily, but rapidly.

The character and general appearance of the machine will be understood from the accompanying woodcut, in which, however, the teeth of the back knife are not shown as slightly serrated, which they are in the implement, so as to form a "bite," and thus to facilitate the cutting process. The top knife only is sharpened when necessary. The machine is held and guided to its work by the left hand, the

right handle being moved to and fro with a sharp twitch, causing it to click with every upward or downward motion. It can be worked with either the right or the left hand



uppermost, the operator moving along the hedge at a slow walking pace. The work done is all that can be desired, either as to neatness or excellence, compared with the ordinary hedge-

shears; while the amount of work that can be got through in a given time is enormously in favour of Ridgway's machine. In the case of garden hedges kept in good condition, it literally mows off the shoots at a surprising rate, and with a degree of regularity that puts the common shears quite in the shade. It will, moreover, cut off shoots nearly an inch in thickness with much greater ease than an ordinary pair of shears. Thus, as a labour-saving appliance, it is worthy of the strongest recommendation.

This machine was invented by Mr. Alfred Ridgway, 18 Market Place, Macclesfield, of whom it may be obtained in various sizes, adapted for different kinds of work.—T. M.

PEA ENEMIES.

DURING this ungenial spring, our garden and field crops have suffered severely, since growth has been almost impossible, and the plant has been altogether unable to withstand attack from insect or other enemies. Our pea-crops are among the greatest sufferers, and the true nature of the attack is almost universally overlooked.

Almost everybody who has attempted the out-door growth of early peas this year has been disappointed; in most cases they are altogether a failure, and few, indeed, are the gardens in which autumn or winter-sown peas look really well. The seed germinated kindly, and there was a good, early plant. The severe winter weather possibly had its effect, but the great mischief on our garden rows and in general field-culture has been wrought since February or March. First, the leaves were eaten and notched; and finally, the whole plant disappeared. The most careless observers blamed the ungenial weather; then came those who looked amongst the smaller mammals, as mice or rabbits, for their enemies, but nine out of every ten gardeners, I believe, blamed the much-maligned sparrows. Garden netting and wire pea-guards were brought into requisition, but the peas continued to waste as fast as ever; nor did the tile mouse-traps or the feather-stringing avail anything.

The result of these attacks is seen everywhere, for many thousands of yards of pea rows in our gardens have been dug up as useless, and some hundreds of acres in field-

culture have been ploughed up. The effect is patent, the cause is latent. Where, however, the careful observer took his lantern and examined his gradually diminishing pea-plant after dark, he probably would meet with his numerous, but tiny enemies, in the shape of an insect (*Sitones*), a myriopod (*Polydesmus*), and a crustacean (*Oniscus*); thus would he become satisfied that it was not the slugs, and see why his lime and ashes had not the desired renovating effect.

These destructives have all been especially busy this spring, and with most disastrous results, on our green-pea crops. The little beetles (*Sitones lineatus*) will be at once recognised when found; but here is the difficulty, as from their general habit of falling to the ground when alarmed, they may very easily be overlooked by a casual observer, since their colour and shape are almost a perfect match with the particles of soil amongst which they feign death for a short time. A quick eye, however, they will not escape, and just now (May) pairs of *Sitones* are especially common sitting on the dilapidated pea-plants, *in cop*. I especially call attention to the pairing, since the life-history of these very abundant weevils is still unknown. It is not difficult to procure eggs, but further than that, I believe no one has succeeded. The knowledge of the economy of *Sitones* is not only entomologically important, but is of great utilitarian interest, since very little can be done to destroy the hardy, hybernating, insignificant beetle itself; in its earlier stages, it may be less capable of resisting attack.

The well-known and omnivorous wood-lice (*Oniscus asellus*) are readily discovered at their evening meals. It is not always they are so destructive to our Pea crops, but this year they have, I know from actual experience, destroyed much. The young succulent early Peas, where grown near their haunts, were almost the only living vegetable growth to which they could resort. Unfavourable as the seasons have been for plant-life, they appear to have had quite a contrary effect on the isopods, for I never remember wood-lice more abundant.

This latter remark equally applies to that destructive little myriopod, *Polydesmus complanatus*. Several evenings lately I should have had no difficulty in collecting these young creatures by the hundred, and this without traversing

much ground and in a comparatively short time, they were so abundant. In many cases I found three, four, and even five on one pea; they were, however, much quicker in getting out of the way than the fat wood-lice, and appeared more impatient of light. These light-coloured, almost white, centipede-like creatures may be at once recognised by their deeply-cleft segments, each of which bears two legs on each side; they are especially fragile even when living, but when dead and dry they can scarcely be touched without breaking.

These are all contemporaneous destructives to the young peas, and, as I have said, an immense breadth of crop has been already sacrificed. Late sowings and half-plants are now the basis on which the general white and blue Pea crop of 1879 rests, and, speaking agriculturally, I must say that to all present appearance this is likely to be a very precarious one.—EDWARD A. FITCH, *Maldon, Essex* (in *Entomologist*, for August, 1879).

TWO GOOD MELONS.

EASTNOR-CASTLE MELON.—After growing this Melon alongside several other well-known varieties for four seasons, I have come to the conclusion that when the cultivator has command of plenty of top and bottom-heat, it is the best Melon I know. It is of a good size, the fruit growing from 3 lb. to 6 lb. each. It has a good appearance, being of a neat oval shape, is nicely but not heavily netted, and when well grown is of a most delicious flavour. We grow our main crops of Melons in slate troughs, 3 ft. long by 2 ft. wide and 18 in. deep. These are placed close over the pipes that run round the sides of our span-roofed Pine-stoves. The Melons are planted two in each trough, and trained up a trellis near the glass in the usual way. The soil we use is good, fresh loam from the limestone formation. We pack it well down when filling the troughs, and usually find that with careful watering, these troughs hold quite enough soil to produce heavy crops of Melons. I may mention that from our early batch this year, grown in six of the above-sized troughs, we cut 102 lb. (one hundred and two) of Melon, nearly all of which was of the Eastnor Castle variety.

EARL OF BEACONSFIELD MELON.—We have grown a batch of the Earl of Beaconsfield

Melon this season, and think it a promising variety, especially for amateurs and others who may not have convenience for growing the more tender varieties which have more or less Persian blood in their veins, and consequently require a high average temperature to grow them at all satisfactorily. I find Lord Beaconsfield to be the freest-setting Melon I have come across. With us we had no difficulty in getting from five to seven fruit to go away together, and this up a trellis only 5 ft. in length. The fruit, when ripe, is not large, averaging about 2 lb. each, but it makes up for that by its free-bearing qualities. It is a green-fleshed variety, and when well ripened, of a good flavour.—H. J. CLAYTON, *Grimston, Tadcaster*.

VILLA GARDENING.

September.

WE must indeed be an optimist who can say, with the poet,—

“Well does the autumn those bright hopes fulfil,
Raised in our hearts by the first look of spring.
With lavish hand continues yet to fling
A bounteous harvest, subject to our will.”

A few days of bright sunshine, warmth, and drying winds led many to hope that summer had come at last, and that there was yet a good measure of enjoyment to be got out of the garden. This hope is again doomed to disappointment; the rain has set in once more. Nature is sadly in arrears, and there is but slight chance of the balance being restored. Gardeners are longing for the end of the year; that the drawbacks of the summer of 1879 may be forgotten, its mistakes blotted out, and a fresh page of record turned of faith and hope for 1880.

Greenhouse.—The enjoyment denied to the villa gardener in the outdoor-garden can be had, to some extent, in his greenhouse. It should be now the gayest floral-time of the year in this habitation for plants. We are finding some cut-back *Abutilons* very precious floral subjects; they were late in starting into growth in spring, when they did so they were treated to a little stimulant in the way of Clay's Fertiliser. They have put forth a good growth, and are now blooming freely. *Abutilon Darwinii tessellatum* with its deep-green leaves marbled with golden-yellow and cinnabar-red flowers veined with crimson, is one of the best, but the leaves do not in a cold house take on their variegation so soon as in a warmer atmosphere. *Boule de Neige*, white; *Lemoinei*, yellow;

rosæflorum, rose; and *megapoticum variegatum*, are about the best that can be had for greenhouse growth. Some plants of *Agapanthus umbellatus* have done well, and now they are carrying good heads of bloom, come in very useful to furnish the stone steps leading to the front door. *Fuchsias* are also in fine condition. Some standard plants of an old *Venus de Medici* are rare subjects; they have big heads, and being pot-bound, are flowering with great freedom. They need to be kept well supplied with water, and a little of Clay's Fertiliser put on the surface-soil once or twice a week is of great advantage. It is when *Fuchsias* become pot-bound that they bloom with so much freedom, and then it is of the greatest importance they be not stinted of water. Owing to the dull, moist weather, the *Zonal Pelargoniums* are very brilliant in colour; the crimsons and scarlets particularly bright; the pinks rich and unusually deep in colour. Now they are somewhat pot-bound, they want plenty of water and drying weather, and a little stimulus. We can find nothing better than Clay's Fertiliser, and we commend it to villa-gardeners as a safe and efficient manure. *Balsams* and *Mimulus* are now in good condition, and both require that the pots be turned round occasionally, so as to expose all sides of the plant to the light,—in fact, the symmetrical appearance of plants is greatly helped by keeping them turned round. By keeping pots clean, picking off decaying leaves, and dying flowers, and other ways, the appearance of a greenhouse is greatly enhanced, and the contents better appreciated.

Cold Frames.—The value of these at this season of the year consists in being able to stow away in them many plants that have gone to rest. The lights can be taken off in wet weather, as with a well-drained bottom no harm can come to the subjects when the sun comes out bright. Some shading should be put on, as it saves labour in the matter of watering. *Chrysanthemums* will now do best in an open spot, but must be kept well watered. A dressing of soot on the surface is of great assistance to the plants, keeping the foliage green and healthy. Plants of hardy *Primulas*, such as *P. denticulata*, *purpurea*, *rosea*, *intermedia*, *nivalis*, &c., should now be divided and repotted for spring blooming. They may have plenty of rain on them, without doing harm.

Flower Garden.—All tall-growing plants, such as *Delphiniums*, *Hollyhocks*, *Dahlias*, *Phloxes*, &c., are making an unusual growth, and as rough winds are apt to come in stormy times, they should be secured to stakes. *Pentstemons*, *Antirrhinums*, *Marigolds*, and others of shorter growth, need such attention also; they are now blooming freely, and in the absence of life and expression in many of

the ordinary bedding plants, their flowers are all the more acceptable. No time should be lost in getting *Wallflowers*, *Sweet Williams*, *Canterbury Bells*, *Brompton Stocks*, *Foxgloves*, &c., planted out, to bloom next spring, as the weather is so favourable to their getting hold of the ground. Some of the most useful plants in the Flower Garden this summer are *Dianthus Heddelegii* and its varieties, and the single and double *Indian Pinks*. *Asters* and *Zinnias* come on into flower very slowly, but *Petunias* and *Phlox Drummondii* are very bright and effective. All bedding plants are making a vigorous growth, and spoiling the gardener's pet arrangements in many instances, but this is an inevitable result of a wet season.

Kitchen Garden.—The Potato disease is showing itself badly, and as the haulm is decaying with great rapidity, it will be well to lift all crops without delay, and store them away thinly in a dry open space. A few *Radishes* and *Turnips* may be sown, as soon as the potato-ground is cleared. The *Onion* crop is very late this year, but it will be wise to harvest the crop as soon as they are at all fit, turning them over occasionally as they lie on the ground before storing them away. It is not too late to sow *Lisbon* and *Tripoli* Onions for spring use. When drying weather comes after rain, the ground soon becomes hard, and the hoe should be freely used when opportunity offers.

Fruit Garden.—*Peaches*, *Nectarines*, and *Apricots* have made strong growths, and it is necessary to keep these cut out, so as not to impoverish the fruit-bearing shoots. These should be thinned-out, and those that remain nailed-in close to the wall, so that the sun can ripen the wood. Standard and pyramid *Fruit-trees* are making an enormous growth, and we hear that American-blight is appearing in many places, while the black-fly is affecting the points of the shoots. *Apples* and *Pears* appear to swell off very slowly indeed, and they cannot be of any great size, whilst generally there is but very few of them. Plantations of *Strawberries* may now be made, putting the plants into well-trenched and heavily-manured soil. They will soon start into growth, and make good plants for next summer.

—SUBURBANUS.

GARDEN GOSSIP.

WE find in the *Gardeners' Chronicle* for August 9th, the usual REPORT ON THE FRUIT-CROPS OF 1879, which has been designated as "the most wretched season on record." Prevalent bad weather, diminished and retarded crops, and postponed exhibitions all point to an adverse state of things, which has probably never been equalled; and to crown all, in the western suburbs of the Metropolitan district, on the night of

August 2-3 occurred a most destructive hailstorm, by which, in some localities, glasshouses and frames were smashed to atoms. Our great national establishment at Kew fared very badly, and ruin has been spread broadcast among the market-gardeners. The Potato-crop is universally late and generally defective, while the progress of the disease has been rapid, and its incidence in many districts severe. The general result as to Fruit-crops is given in the following table, the figures of which may be taken as approximately and substantially correct:—

	Over Average.		Average.		Under Average.
Apricots	9	.....	52	.....	91
Plums	12	.....	78	.....	110
Cherries	9	.....	69	.....	115
Peaches and Nectarines	9	.....	60	.....	94
Apples	12	.....	43	.....	144
Pears	9	.....	92	.....	99
Small Fruits	63	.....	129	.....	13
Strawberries	63	.....	123	.....	22
Nuts	17	.....	64	.....	47

Strawberries and small fruits, though abundant, suffered much from the excess of moisture, which, together with the absence of sun, produced insipid or sour fruits, while from the same causes almost all crops are, at least, a month later than usual.

— THE Hailstorm which has recently visited the western suburbs of London, has afforded some data as to the capacity of certain sorts and sizes of GLASS TO WITHSTAND HAILSTONES. The storm in question was a very severe one, but it was observed (see *Gardeners' Chronicle*, August 16th) that the damage bore an obvious relation to the size of panes. Common glass, varying from 15 to 20 oz. to the foot, in panes 10 in. by 22 in., was entirely destroyed, while good English 21-oz. glass, in one house of the same range, with panes of the same size, has not half of them broken. An adjoining house, with English 21 oz., but 15 in. by 25 in. wide, was smashed up as completely as the commoner 10-in. glass; yet another house, in which English 15-oz. 7-in. wide glass was used, had barely half its panes broken. From this it would appear that 15 oz. glass, in squares 7 in. wide, is as safe as 21 oz., when 10 in. to 12 in. wide, and that even 21 oz., if 15 in. wide, is no stronger to resist heavy hail than 15 or 16 oz. if 10 in. wide. The foreign glass (so largely used for so-called cheap houses) is very brittle as compared with good English makes, the 21-oz. foreign being little, if any, stronger than 15-oz. English of the same size. These facts should be well considered by persons ordering a greenhouse, as the security supposed to be afforded by using 21-oz. glass may be nullified by an extra width of pane.

— IN the class of half-hardy RHODODENDRONS, Mr. Davies, of Ormskirk, has obtained some valuable sweet-scented hybrids bred between *R. multiflorum* and *R. Edgworthii*. Of these the following have been put into circulation:—*Countess of Derby*, *Countess of Sefton*, *Lady Skelmersdale*, *Duchess of Sutherland*, *Miss Davies*, and *Mrs. James Shawe*. *Countess of Derby* is regarded as the finest, because so very free-blooming, the plants being loaded with the large and finely formed flowers, which are of great substance, and measure 3 in. to 4 in. in diameter, pure white, bell-shaped, and most deliciously fragrant. *Countess of Sefton* has large flowers, cup-shaped, very stout, white, with a band of rosy-purple on each side of the corolla, the margins

handsomely fringed. *Lady Skelmersdale* has pure white trumpet-shaped flowers, smooth on the edge, and very handsome in form. *Duchess of Sutherland* has handsomely fringed flowers, pure white in colour, and is of a robust habit of growth. *Miss Davies* has pure white bell-shaped flowers. *Mrs. James Shawe* has white cup-shaped flowers of great substance; the plant of a bushy habit, and flowering profusely. These *Rhododendrons* are very suitable for flowering in a cold greenhouse in early spring, the protection of a cold frame during winter being sufficient to secure them from harm.

— WE learn from the *Gardener* that a new CUCUMBER, SIR GARNET WOLSELEY, has been raised by Mr. J. Hamilton, of Carlisle, who has long been celebrated as a raiser of Cucumbers. It is the result of a cross, in which Dean's Prolific was fertilised with the Duke of Connaught, is remarkably handsome, and of excellent flavour. It grows to an average length of 18 in., is entirely destitute of shank or shoulder, and has a smooth and even surface. As a rule, it produces three fruits to every joint, which swell rapidly to maturity in succession. "Taken as a whole, we consider this the best Cucumber we have ever met with, and predict that it must become a great favourite of Cucumber-growers."

— AS a remedy for CATERPILLARS ON GOOSEBERRY BUSHES, a correspondent of the *Irish Farmers' Gazette* recommends to "stick some branches of the common elder into the gooseberry bushes," then it will be found that the caterpillars will not trouble them.

— MR. BAKER, of Heavitree, one of the most successful rosarians, when describing in the *Garden* some points in ROSE-GROWING, revealing his rose secrets, as he puts it, states that his flowers come from cut-back plants (*Manetti*), most of them five years old, and he adds:—"About the middle of August I have the greater part of the old wood cut out, in order that the young rods may have plenty of light and air to enable them to ripen properly, and from this wood I get my show blooms for the following year. In November I give my plants a good dressing of thoroughly rotten cow-manure; this I have dug in at once, and I do not like it to remain on the surface during the winter. In March, after the pruning is complete, the ground is lightly forked, and after that occasionally hoed up to the time of blooming. As soon as the bloom buds are formed, I give the plants plenty of liquid manure, composed of sheep-droppings, soot, and a little guano, and sometimes, in a wet season like the present, I sow a little guano; but I much prefer the liquid manure."

— THE new Pampas Grass, *GYNERIUM JUBATUM*, is a magnificent plant, with a flowing, mane-like inflorescence, the lateral branches of the plume being remarkable for their length and graceful curvature, and the secondary branchlets being numerous, long, and slender, the whole forming a dense, massive plume, not less than three feet in length. The inflorescence—female—is of a silvery hue, slightly tinged with pink at the base of the separate florets.

— THOUGH one may not be able to quite straighten young trees that are crooked, yet

their appearance, says the *Cultivator*, may be greatly improved by the following operation:—Make two or three longitudinal incisions on the inner side of the bend, and repeat this several times during the summer; it will increase the formation of wood on that side. Trees from 2 in. to 4 in. in diameter have by this means, it is said, become nearly straight.

— ALMOST the whole of the SNOWDROP BULBS sold by the trade in this country are grown in Lincolnshire, the proportion of home-grown to foreign bulbs sold being at the rate of 100,000 of the former to 10,000 of the latter. The principal centres of the bulb trade in Lincolnshire are the towns of Holbeach and Spalding, and the bulbs are grown principally by small farmers and cottagers, from whom they are collected by the local traders in lots from 1,000 upwards, then sampled to the leading houses in the trade, and subsequently distributed among the tens of thousands of flower-loving Britons.

— THE GOLDEN GEM POLYANTHUS is one of the giant hese-in-hose cowslips, known in gardens as Polyanthus. It is of a clear pale yellow, and, owing to its duplication, is very striking. It blooms remarkably early, and as a spring bedding plant is most valuable, and perhaps unrivalled. It is a robust grower, and propagates with ease, if not exposed too freely to the hot summer sun. These duplex forms of the polyanthus are now coming in great variety, and will be most valuable for spring-garden decoration.

— THE PROCUMBENT PHLOXES are among the most showy and beautiful of spring-flowering plants. P. Nelsoni forms a perfect cushion of snowy white blossoms, so thickly set as to hide nearly the whole of the foliage. At this season the above-named Phlox, especially when associated with P. frondosa, a variety having much the same habit, but with rose-coloured flowers, which form a most pleasing contrast, is invaluable. These and others of the same class, as P. setacea and subulata, like a light rich soil, where, if not fully exposed to the sun, they grow and spread with great freedom. Where spring bedding is carried out, these plants are almost indispensable.

— THE Rev. T. C. Bréhaut reports, concerning two NEW AMERICAN PEACHES (*Gard. Chron.*, n.s., vol. xii., p. 86), that he has gathered both the ALEXANDER and the AMSDEN JUNE, and considering that the season for Peaches in unheated orchard-houses is generally about a fortnight backward, and that there has been a great want of sunshine, he considers these new Peaches to be very good. The Alexander especially is a finely-coloured variety, of good size and quality, the colour eclipsing that of any other variety in the same gathering, which is an appreciable advantage in a Peach. They were of about equal size, but the Alexander was by far the more showy. The Amsden June is, however, more prolific. They were gathered on the same day as Early Rivers and Early Louise. This season Early Louise is rather in advance of Early Rivers, but this is contrary to our usual experience. There can be no doubt that Early Louise is our best early Peach, and for the open wall especially so; but now that we have these new American Peaches, it remains to be seen whether the Alexander may not

eventually become a rival. At any rate, so far, they are a great acquisition.

— AMONGST the Spring Gardening arrangements at Belvoir Castle, there is a VIOLET GARDEN, which during the early part of the season was full of interest, because full of bloom. The variety called Marie Louise appears to be the favourite. Mr. Ingram reports that it flowers all through the winter, and is far superior in every way to the old Neapolitan. The next place is taken by Victoria Regina, a fine single blue variety, the flowers of which are very large and sweet.

— SOME new varieties of GENTIANA ALPINA have been sent to our contemporary the *Garden*, by Mr. H. Gusmus, of Taibach, Austria. Their colours are remarkably distinct and beautiful, varying from the deepest azure-blue to pure white, and in one flower of the latter colour the tips of the corolla-lobes are of a rich blue. In all the forms except the white the throat of the corolla is copiously spotted with blue on a greenish ground, and all have greenish marks on the outside. These varieties appear to be as yet unknown in English gardens, but we may hope soon to see them adorning our rockeries and flower-borders.

— It appears that we now get PINE-APPLES FROM MADEIRA, for a Covent Garden Market correspondent has recently reported having received from that island a consignment of fifty Pine-apples, larger and much superior in quality to any that had been received from St. Michael's. The weight ranged from 6 lb. to 9 lb., and they were amongst the finest examples that have been seen in the market. They came in very conveniently, too, just after the St. Michael's were over.

— THE Americans, it appears, have a NEW STRIPED TEA ROSE, of which the following particulars are given in the *American Agriculturist*:—"This new variety originated in 1877 with G. Cartwright, Esq., of Dedham, Mass., who states that it appeared as a sport upon the well-known crimson Tea Rose, Bon Silene. The flowers are distinctly striped with crimson and white, and at the same time retain all the valuable qualities of its class—delicacy of colour and texture, exquisite fragrance, and continuous bloom. The leaf, from the axil of which the sporting shoot started, showed in one half the leathery foliage of the sport, while the other half had the foliage peculiar to Bon Silene." Mr. Peter Henderson has named this new rose "American Banner," the colours being very nearly those of the stripes of the American flag.

— THE curious little aquatic Marsilead, *Azolla pinnata*, appears to be a plant of very rapid growth. It was introduced to Kew last autumn, the plant not then being large enough to cover a square inch. It has now spread over the surface of some of the tanks, which are several square yards in size, forming a dense green carpet, as does the common duck-weed. It is, however, much prettier in its appearance, since it may be compared to some small-growing Selaginella floating on the surface of the water. It evidently thrives best on the surface of fluid mud, but it also succeeds satisfactorily in water of ordinary clearness and temperature. It will be a very suitable plant for growing in in-door aquaria.



Miss E. B. del

Chromo G. Severeys, Brusse

Camellia Nympha Egeus.

CAMELLIA NINFA EGERIA.

[PLATE 499.]



UR figure of this fine, double white Camellia, which is certainly one of the best, if not the very best of the double whites in cultivation, was prepared from specimens kindly furnished by Messrs. W. Paul and Son, of Waltham Cross, who now have, we believe, quite the best collection of these noble greenhouse shrubs to be found in the neighbourhood of London, and whose finely-grown specimen plants make a display which, during the blooming season, it is well worth the journey to see.

Of the variety itself, which we presume is of Italian origin, we can say, from our own knowledge, that it is exceedingly beautiful, and that it is quite in the front rank as to quality; fully equal to the old Double White in the quality of its flowers—and that is saying much in its favour—and superior to it in richness of foliage, so that altogether we feel justified in stating that it will be found to be better than that well known favourite sort. It is robust and free in growth, has dark-green broad handsome foliage, and blossoms freely. As to the individual flowers, they are large in size, perfect in form, and pure in colour, and what more could be said in their praise?—T. M.

Mr. William Paul has published, not long since, in the pages of a contemporary,* a somewhat lengthened treatise on the Camellia and its cultivation, from which we here select a few passages on the renovation of debilitated plants:—

“How often we meet with Camellias, both large and small plants, in what a good cultivator would call a ‘deplorable state.’ Bare of branches at their base, the old wood barren, and the new growth weak, the leaves small in size and sickly in appearance, we look at them with aversion rather than with delight. They are embodiments of ugliness and weakness, instead of personifications of health and beauty.

“A free use of the knife in pruning, with heat and moisture, are the means by which plants in that condition may be restored to health and beauty. Take them in hand in September. Turn them out of their pots or tubs, and make sure that the ball of earth is moist all through, and drainage satisfactory. It is no uncommon thing with Camellias that have been for many

years in pots or tubs, to find the centre of the ball of earth in which they grow so hard and dry as to be almost impervious to moisture. This is a most unsatisfactory state of things. Plants in pots and tubs have but a limited area of soil from which to draw the food supplied through the roots, and a great part of this has become as sterile as the sand of the Sahara. The practised hand will know by the weight of the ball of earth how far this state of things exists, but we know of no rule by which the unexperienced can arrive at correct conclusions. If any doubt exists, the safest way with him is to get an iron pin about the size of a crow-quill, and pierce the ball through and through, both perpendicularly and horizontally; then place the balls entirely under water, in tubs or in a pond, and leave them to soak for six hours. By this means the whole mass will be saturated, and not likely to become dry again at the centre, if watering be henceforth properly attended to. When the plants are put back in the pots or tubs, see that perfect drainage is secured, and press the soil firmly at the top, so that it may be equally solid from the centre outwards towards the circumference. Now thin out and cut back the branches freely, leaving the plants mere stumps in appearance, but taking care to leave a few shoots or leaves to keep up the action between roots and branches.

“Next place them in a house, and on the turn of Christmas apply heat and moisture; and if bottom-heat can be given, it is a point in their favour, although this latter condition is not absolutely indispensable. A temperature of 60° by day and 50° by night may be maintained, and the syringe should be used freely morning and evening. About March the new growth will commence. Here and there a solitary eye will start into life, and in some places along the bare stems, where no sign of life was previously seen, clusters of eyes will rise into being. Now is the time to refashion the plants. Estimate the number of shoots required, and mark out the positions they should occupy, rubbing out the surplusage. As growth proceeds, and the leaves acquire some size, weak liquid manure should be given. From this time forward these plants require the same treatment as Camellias established in pots. Debilitated and unsightly plants may sometimes be restored in a single year, but it sometimes requires two or three years, much depending on the age and condition of the plant; and beyond this, certain varieties break more freely than others, and are, consequently, more easily renovated.

“We believe that pruning both of healthy

* *Gardeners' Chronicle*, N. S., xi., 461, et seq.

and unhealthy plants might be entirely dispensed with, if the practice of rubbing out the supernumerary or ill-placed eyes (disbudding) was more freely resorted to, in the earliest stages of the new growth."

MARKET PLANTS.—XIV.

THE DOUBLE-WHITE PRIMULA.



IF all the new varieties of double-white forms of *Primula sinensis fimbriata* that have been produced during the past twelve or fifteen years, and several have appeared of remarkably fine quality, not one has so far, or is likely to do so, taken the place of the useful old Double-white, which has always been a great favourite for cutting from during winter and in early spring. All who grow cut flowers for winter make a point of cultivating this Primula, but some make a great speciality of it, and grow it to a large extent, and it proves a very remunerative subject.

One of the largest growers of the Double-white Primula is Mr. John Reeves, of Acton, and during the months of November and December it is possible to see as many as three thousand plants at one time, the large majority growing in 48-sized pots, and all plants of a year old or so; the remainder in 32-sized pots. In December, the plants begin to come into bloom, and being good branching specimens, they throw up a number of flower-stems, which, yielding a valuable harvest of flowers, are invaluable at the Christmas and New Year seasons, when white flowers are in large demand.

Now the Double-white Primula has been regarded as a "miffy" subject, and one difficult to propagate. But Mr. Reeves and many others find no difficulty in propagating it. Mr. Reeves is putting in cuttings almost all the year round, but the greater portion of the stock is propagated in the months of May and June. The cuttings are taken from the two-year old plants, and placed singly in thumb-pots in a strong bottom-heat. The soil used for the purpose is a compost made up of good strong maiden-loam, leaf-mould, rotten manure, quite destitute of insect life likely to be harmful to the plants, and silver sand. As soon as the cuttings are rooted, they are potted off into 48-sized pots, the size in which they are flowered, a similar compost being employed, and the plants are well-drained, *i.e.*, a good layer of broken crocks is placed at the bottom. It is the presence of stagnant moisture at the roots that kills many Double-white Primulas, and it should be avoided by all who wish to have their plants healthy and carrying good heads of bloom. Mr. Reeves states that he has very few failures with his cuttings, and at no stage are the plants "coddled."

When sufficiently hardened off, after being

permitted to establish themselves in heat after repotting, the plants are taken to a low span-roofed plant-house, with a stage on either side, where they remain till they flower. During the interval, the well-being of the plants is simply a question of careful management, and the simple principles of this good management are,—a dry stage to stand on, plenty of air, and careful watering. The last point is a matter of great importance, especially as affecting autumn and winter management. Water is given only to such plants as require it: there is no such thing as indiscriminate, careless watering, by which many good plants are sacrificed. Another important point is not to wet the foliage at the time of watering, and especially during the dull autumn and winter months. At this time of the year air is given on the lee side, even if rain be falling, and there is just sufficient fire-heat maintained to keep up a comfortable temperature, but nothing like a close, warm one.

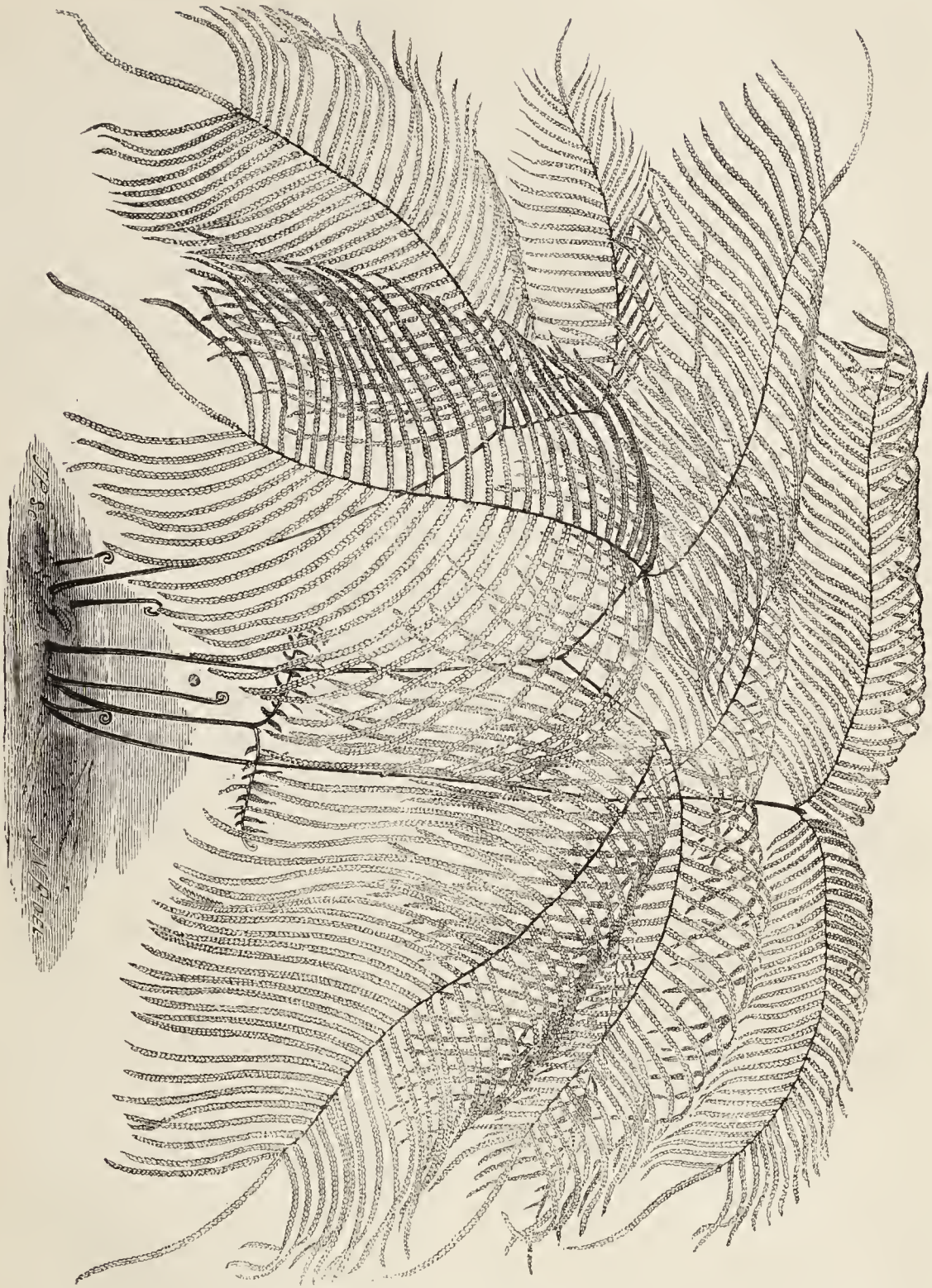
The old Double-purple Primula is a little grown, but it is the old Double-white that is most cared for, and which pays the best return to the cultivator.—R. DEAN, *Ealing, W.*

GLEICHENIAS.

FROM their first introduction, these most distinct and elegant Ferns have been general favourites. For a long time, their scarcity and consequent high price precluded their being generally grown, neither are they yet or likely to be so plentiful as the generality of other species, for the reason that they are not easily raised from spores in the way that most Ferns can so readily be increased. Not but that Gleichenias can be raised in this way, for many years since I recollect seeing with Mr. Armstrong, who was for a long time gardener to B. Hadwen, Esq., of Liverpool, a quantity of seedlings of, if I recollect rightly, *G. dicarpa*.

The ordinary method of propagation is by layers, made by rooting their long, creeping rhizomes, which, when the plants get strong, and are in a vigorous, healthy condition, they produce freely, pushing them beyond the rim of the pot or tub in which the plants are grown. The usual mode of procedure is to hang, held up by wire, a row of 3-in. or 4-in. pots round the pot in which the plant to be operated upon is growing, first, draining and filling the pots with sandy peat, and on these pegging the creeping stems, and allowing them to remain in this position until the young growths are fairly rooted, after which the rhizomes

GLEICHENIA DICARPA LONGIPINNATA.
A beautiful new variety lately introduced by Mr. B. S. Williams.



are severed from the parent plant, and the young ones are encouraged to make way on their own account; but the process is a somewhat tedious one, requiring a good deal of time, for unless the layered stems are well rooted before being cut away from the old plants, they are all but certain to dwindle away. The hard, wiry nature of the plants in all their several parts is such that they will not suc-

ceed divided in small bits, in the way common with many Ferns. Hence it is that when an attempt is made to so increase them, it generally ends in failure, even if the division takes place before growth has commenced.

But although *Gleichenias* will not submit to be thus subdivided into small pieces, yet when the plants get strong, they will bear cutting up to a moderate extent. This, indeed, becomes

an absolute necessity, the omission to carry out which in due time will often result in the reduction of very large and valuable specimens to a shadow of what they had once been. For if the extremities of the creeping stems are allowed for any considerable time to keep on extending over the edge of the pot or tub, they die back, the result of which is that the inner or central portion of these creeping rhizomes having become with age both hard and devoid of eyes, they all but refuse to break back; if they do so it is very sparingly, and almost invariably weakly. This state of matters is often brought about by a reluctance to divide fine examples, through fear that they would not well bear it; yet if the operation is carried out at the right season, there is nothing to fear, provided that the plants are not cut up into too small pieces.


My own practice has been to cut up plants that have attained a considerable size—say, that have filled 18-inch or 20-inch pots, or occupied tubs larger than this. A plant filling an 18-inch pot may safely be divided into six or eight pieces, or possibly still smaller, but, except for trade purposes, I should by no means advise going further than this, as the smaller the divisional pieces are, the more weakening is the effect upon them, and this to a greater extent than with most ferns. I have always found the results most satisfactory when a plant of the size named was cut into three or four, in which case the succeeding growth has scarcely shown the effects of breaking up, the first crop of fronds being little, if any, inferior in size to those produced before the plants

were disturbed. The way to proceed is to separate the fronds composing the head of the plant, allotting to each portion of the root to be separated the portion of fronds springing immediately from it; then to turn the plant out of its pot, and with a large carving-knife or sharp edging-iron, cut the pieces asunder right through the ball, without any more disturbance of the roots than the simple severance makes unavoidable, and at once to place them in pots, well drained and sufficiently large to admit of a good season's growth, without the likelihood of the young creeping stems, that during the time will probably be formed, extending over the rim.

The best time for carrying out the operation is in the autumn, about the end of September or October, and the plants should be at once placed in a temperature of 50° by night, and 5° or 10° higher in the day, and kept at something like this through the winter, which will keep them moving on slowly, and ready to grow away freely when the time comes round. Fibrous peat, to which has been added a seventh or an eighth part of broken crocks, or coal-cinders (one will answer as well as the other), and a little sand, grows them the best. Where ordinary pots are used, they may be one-third filled with crocks, as the plants are shallow rooters; but care must at all times be taken that the soil never gets dry, or it will do serious mischief. They are better not syringed overhead, and do much the best in a drier atmosphere than that required for most ferns.—T. BAINES, *Southgate*.

THE NATIONAL CARNATION AND PICOTEE SOCIETY.

NORTHERN SECTION.

 HIS exhibition was held in the gardens of the Royal Botanical and Horticultural Society of Manchester, at Old Trafford, on August 23rd; and the weather being delightfully fine, there was a large attendance of visitors.

The date of exhibition was not decided till this ill-fated season had already shown great unkindliness; and large allowance was made for time lost beyond redemption, but it proved not "play" enough for such a summer (save the mark), as has consisted mainly in cold days, wet or overcast, and in nights so clear and

bright, that we knew the wet earth was losing vital heat, both in the gloom under the clouds by day, and by radiation under the stars by night.

All the growers complained that "they were young," in allusion of course to the flowers of the day; and one old hand must have had many saddening thoughts of wonder at what the floral world had come to, as he watched the demoralising spectacle of his Carnations coming out under glass and fire-heat in mid-August. The brilliant collection at Sheffield is too large to be fully protected, and it was

only in the middle of September that Ben. Simonite's bloom was in the splendour of its strength. I am indebted for the following report to the kind assistance of my florist friends Mr. Simonite and Mr. William Bolton, both of whom have often rendered me very grateful and ready help when, as secretary and single-handed, I have found the work at the shows more than could be got through well alone. Obligated to leave at midday, I had no season of calm retirement for a particular look at the flowers. I saw by the unfilled classes that the show was short in quantity, and that the bloom was young, by the form and brilliancy of many flowers, and the presence of early varieties in their leading blooms.

CARNATIONS.

Class A. 12 blooms, dissimilar.—1st, Mr. Benjamin Simonite, Rough Bank, Sheffield, with Seedling, R.F., fine smooth petal, pure white; Seedling; Dr. Foster, P.F., very fine; James Taylor, P.P.B., fine; Mayor of Nottingham, P.F., very fine; Seedling, very fine; Seedling, S.B., extra fine, will probably make a grand sort; Squire Meynell, P.F.; J. D. Hextall, C.B., fine; Sportsman, S.F.; Seedling, S.B., finely marked and very pure white; Dan Godfrey, S.F. The flowers were young and bright. 2nd, Mr. Jonathan Booth, Failsworth, Manchester, with Lord Napier, S.B.; Squire Meynell, P.F.; Seedling; Clipper, S.F.; Seedling; True Briton, S.B.; Seedling; Admiral Curzon, S.B.; Fanny, P.P.B.; Mayor of Nottingham, P.F.; Captain Stott, C.B.; John Keet, R.F. A very even lot of flowers, bright and well arranged. 3rd, Mr. George Rudd, Bradford, with Mercury, S.B., a fine bloom; Sibyl, R.F.; Sarah Payne, P.P.B.; Seedling; Dr. Foster, P.F.; Marshal Ney, C.B., fine for the sort; Clipper, S.F.; Lord Wilton, P.F.; Admiral Curzon, S.B., extra fine bloom; John Keet, R.F.; James Taylor, P.P.B.; Mr. Battersby, S.F., fine for the sort. 4th, Mr. Thomas Mellor, Ashtou-under-Lyne, with Juno, P.F.; James Merryweather, R.F.; Dr. Foster, P.F.; Sibyl, R.F.; John Keet, R.F.; James Taylor, P.P.B.; Dan Godfrey, S.F.; Admiral Curzon, S.B.; Earl Stamford, P.F.; Sportsman, S.F.; Squire Trow, P.F.; Clipper, S.F. There were no competitors for the 5th and 6th prizes.

Class C. 12 blooms, 9 dissimilar.—1st, Mr. Richard Gorton, Eccles, with John Keet, R.F., extra fine; James Douglas, P.F.; Mars, S.B.; Sibyl, R.F.; Mars, S.B.; James Taylor, P.P.B.; John Keet, R.F.; Dr. Foster, P.F.; J. D. Hextall, C.B., very fine; Admiral Curzon, S.B., very rich; Sarah Payne, P.P.B., superb; and Garibaldi, S.B. A very bright pan, with plenty of life. 2nd, Mr. John Fletcher, North Bierley, Bradford, with an excellent stand, particularly rich in bizarres, consisting of Seedling; Sibyl, R.F.; Sarah Payne, P.P.B.; Seedling; Admiral Curzon, S.B.; Dr. Foster, P.F.; Mars, S.B.; Sportsman, S.F.; J. D. Hextall, C.B.; Lord Raglan, C.B.; Clipper, S.F.; Sibyl, R.F. 3rd, Mr. W. Slack, Chesterfield, who had Sarah Payne, P.P.B., extra fine, and a well marked bloom of Mars, S.B. 4th, Mr. Joseph Chadwick, Duckinfield, whose blooms were rather small, but very neat. 5th, Mr. James Sharp, Birmingham. 6th, Mr. C. Auckland, Chesterfield.

In the Class for Sells, 12 blooms, Mr. R. Gorton was the only exhibitor, and gained the first prize.

There were no exhibitors in the Class for 6 Carnation blooms.

SINGLE BLOOMS, in classes.—*Scarlet Bizarres*: 1st, Mr. G. Rudd, with Admiral Curzon, grand. 2nd and 5th, Mr. J. Fletcher, with Admiral Curzon. 3rd, Mr. B. Simonite, with Mercury; 4th, with Admiral Curzon; 6th, with Dreadnought.—*Crimson Bizarres*: 1st, Mr. R. Gorton, with J. D. Hextall, very fine. 2nd and 4th, Mr. B. Simonite, with J. D. Hextall. 3rd, Mr. G. Rudd, with Captain Stott. 5th, Mr. J. Fletcher, with J. D. Hextall. 6th, Mr. J. Booth, with an unnamed variety.—*Pink and Purple Bizarres*: 1st and 2nd, Mr. B. Simonite, with James Taylor. 3rd and 5th, Mr. W. Slack, with Sarah Payne. 4th and 6th, Mr. R. Gorton, with James Taylor.—*Purple Flakes*: 1st, Mr. B. Simonite, with Dr. Foster. 2nd, Mr. R. Gorton, with Dr. Foster. 3rd, Mr. G. Rudd, with a Seedling. 4th, Mr. B. Simonite, with Squire Meynell. 5th, Mr. J. Booth, with Dr. Foster. 6th, Mr. R. Gorton, with Squire Meynell.—*Scarlet Flakes*: 1st, Mr. J. Fletcher, with a Seedling. 2nd and 4th, Mr. J. Booth, with Sportsman. 3rd, Mr. G. Rudd, with James Cheetham. 5th, Mr. J. Booth, with Pilot. 6th, Mr. R. Gorton, with Clipper.—*Rose Flakes*: 1st and 2nd, Mr. B. Simonite with Seedlings, fine chaste flowers, good. 3rd, Mr. R. Gorton, with James Merryweather. 4th, Mr. T. Mellor, with James Merryweather. 5th, Mr. J. Chadwick, with John Keet. 6th, Mr. G. Rudd, with Maid of Athens. Some of the flowers, observes a contemporary, were much over-dressed, especially the younger ones; old flowers are improved by legitimate dressing, but those not fully developed are far better left alone.

The Premier Carnation selected from the whole of the flowers shown was an extra fine bloom of John Keet R.F., exhibited by Mr. R. Gorton, Eccles, in Class C.

PICOTEE.

Class B. 12 blooms, dissimilar.—1st Mr. J. Booth, with, considering the season, an extra fine pan, and very neat; it contained Miss Wood, light rose-edged, very fine; W. Summers, medium red-edged, fine; Countess of Errol, light rose-edged; Mrs. Keynes, light red-edged; Pieco, heavy purple-edged; Clara, light red edged, extra good petal; Medina, heavy purple-edged; Miss Sewell, light rose-edged; Miss Horner, heavy rose-edged, extra fine, a superb bloom; Alice, medium purple-edged; Mrs. Lord, heavy rose-edged; Lord Valentia, heavy red-edged. 2nd, Mr. B. Simonite, with Miss Wood, light rose edged; Ann Lord, light purple-edged, the best light shown; Seedling; Mrs. May, heavy purple-edged; Pieco, heavy purple-edged; Violet Douglas, light red-edged, very fine; Fauny, medium purple-edged; Teresa, light rose-edged, very fine bloom, pure; Juliana, heavy scarlet-edged; Mrs. Alleroff, light rose-edged; Mary, light purple-edged; Seedling. 3rd, Mr. G. Rudd, with J. B. Bryant, heavy red-edged; Obadiah, heavy scarlet-edged; Rev. F. D. Horner, light red-edged; Miss Wood, light rose-edged; Jessie, medium purple-edged; Master Norman, heavy red-edged; Zerlina, heavy purple-edged; Seedling: Norfolk Beauty, heavy purple-edged, very fine, for the sort; Thomas William, light red-edged; Mrs. Fuller, heavy red-edged, a very nice sort; Isabella, heavy purple-edged, a nice flower. There was no further competition.

Class D. 12 blooms, 9 dissimilar.—1st, Mr. R. Gorton, who had Miss Horner, heavy rose-edged, extra fine; Mary, light purple-edged; Miss Wood, light rose-edged; Rosy Queen, heavy rose-edged; Her Majesty, light purple-edged; Purity, light rose-edged; Emily, medium red-edged; Mrs. Lord, heavy rose-edged, extra fine grown bloom; Rev. J. B. M. Camm, heavy purple-edged; Miss Wood, light rose-edged; Juliana, heavy scarlet-edged; Princess of

Wales, heavy red-edged. 2nd, Mr. John Fletcher, with Obadiah, heavy scarlet-edged; Alice, medium purple-edged; Brunette, heavy red-edged; Rev. F. D. Horner, light red-edged; Seedling; Master Norman, heavy red-edged; J. B. Bryant, heavy red-edged, a nice bloom; Seedling; Miss Lec, medium rose-edged, very neat and pretty; Zerlina, heavy purple-edged; Miss Wood, light rose-edged; Morna, heavy red-edged, an extra fine bloom. 3rd, Mr. Slack, who had remarkably good blooms of Violet Douglas, light red-edged; and Mrs. Allcroft, light rose-edged. 4th, Mr. Thos. Mellor, who had the finest Violet Douglas, light red-edged, in the Show, a first-class sort, that should be in every collection. 5th, Mr. J. Sharp. 6th, Mr. C. Auckland.


In the Class for 6 blooms there was no competition.

SINGLE BLOOMS, in classes.—*Red, heavy-edged*: 1st and 2nd, Mr. G. Rudd, with J. B. Bryant. 3rd and 5th, Mr. J. Fletcher, with Morna. 4th, Mr. J. Booth, with Lord Valentia. 6th, Mr. G. Rudd, with Mrs. Norman.—*Red, light-edged*: 1st and 3rd, Mr. B. Simonite, with Violet Douglas. 2nd, Mr. J. Fletcher, with Thomas William. 4th and 5th, Mr. J. Booth, with Clara. 6th, Mr. G. Rudd, with Thomas William.—*Purple, heavy-edged*: 1st and 3rd, Mr. Chadwick, with Miss Chadwick. 2nd, Mr. Sharp, with Emily. 4th, Mr. B. Simonite, with Mary. 5th, Mr. Auckland, with a Seedling. 6th, Mr. J. Booth, with Picco.—*Purple, light-edged*: 1st, Mr. J. Booth, with Ann Lord. 2nd, Mr. B. Simonite, with Ann Lord. 3rd, Mr. R. Gorton, with Cynthia. 4th, Mr. Sharp, with Crystal Palace. 5th, Mr. J. Booth, with Alice. 6th, Mr. Mellor, with Mary.—*Rose, heavy-edged*: 1st, Mr. R. Gorton, with Miss Horner. 2nd, Mr. Mellor, with Mrs. Ford. 3rd, Mr. G. Rudd, with Seedling. 5th, Mr. Fletcher, with Rev. H. Matthews; 6th, with Edith Dombrain.—*Rose, light-edged*: 1st, Mr. J. Booth, with Miss Wood, very fine. 2nd, Mr. B. Simonite, with Miss Wood, also fine. 3rd and 4th, Mr. Mellor, with Miss Wood. 5th, Mr. J. Booth, with Bertha. 6th, Mr. B. Simonite, with Mrs. Allcroft.

The Premier Picotee selected from the whole of the flowers shown was Miss Horner, exhibited by Mr. Jonathan Booth, Failsworth; this was a splendid heavy, rose-edged flower, and the variety was grand through all the exhibition.

The Carnation-growers have the sympathy of those brother-florists who have preceded them in a difficult season with the Auricula and the Tulip, though the larger part of us have shared more or less in the trying times that have been for all these flowers. There is all the brighter hope for a better season next year, in that this could hardly have been a worse.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

SCARIFICATION AS A CURE FOR GUMMING IN FRUIT-TREES.

OME time since, M. Prillieux read before the French Academy of Sciences, an account of some experiments made to ascertain the cause and cure of gumming in fruit-trees. The formation of gum, he remarked, is more or less prejudicial to the health of the subjects affected, and from his own in-

vestigations he had been enabled to establish the fact that it constitutes a veritable disease, which he named *gommoses*. The alimentary substances held in reserve in the deeper parts of the tissues, instead of serving for the growth of the plant, are diverted for the production of gum, and a portion of them accumulate, awaiting the instant of their transformation, about gummy centres, which seem to act in the organism as centres of irritation. On the first appearance of gum in the cellule, the unchanged starch gathers into small masses, around which forms a thin coating of gum. Gradually the starch diminishes, while the coating of gum increases, until at last the starch disappears altogether, leaving generally a vacant space in the centre of the mass of gum. Often the gum, produced in considerable quantity, is formed in the spaces between the tissues, generally between the wood and the bark, often also at different depths in the wood. The gum spaces grow at the expense of the neighbouring tissues, which suffer important modifications; the cambium, instead of producing woody fibre, forms cellules, in which abundance of starch is deposited, the starch subsequently becoming converted into gum. This specific formation of a starchy parenchyma may be considered as the first specially active phase of the disease. It is a true pathological indication, exhibiting the formation of a new morbid tissue by a specific transformation of the constituent elements of the normally healthy tissue. What follows? In the first place, an exudation of gum into the interior of the vessels, and sometimes of the fibres; next, the appearance of the gum, at first, between the cells, and afterwards in the interior of the cellular wall itself, the layers of which become separated by, and distended with, the infiltrated gum. In this case, also, it is possible that the substance of the cellular wall undergoes a partial gummy degeneration.

Although already undergoing a gummy degeneration, the adjacent tissues manifest a great activity in forming a fresh matter, and the cellules on the margin of the affected space increase in size and number in an extraordinary degree. An organic action has been set up, quite analogous to that which M. Trecul has so well described in his account of the forma-

tion of swollen growths on the lips of bark wounds.

The study of the changes which occur in the gum-affected tissues enables us to determine how, under its influence, the normal functions of the plant become deranged. The nutritive matters, laid up in reserve in the tissues, instead of contributing to the aliment and growth of the plant, go to the production of gum, and a portion of them, before they are transformed into it, collect in quantities around the gummy centres of irritation. We might almost draw a comparison between the effects of these centres of irritation on the organisation of a plant, and what takes place when an insect punctures the bark and deposits its eggs among the tissues. In the latter case, under the influence of a specific source of irritation, a gall is formed, the tissues become modified in their structure, and assume a different appearance, while the new cellules which are formed enclose in their interior a collection of alimentary substances (starch, in particular), which are intended no longer to supply the requirements of the plant, but to serve as food for the little parasite that is about to be hatched and bred among the materials. It is much the same with the phenomena connected with the formation of the woody parenchyma in those parts of the plant which may contain the elements destined to be employed in the formation of gum. These phenomena appear to result from the poisonous activity of the centres of gummy irritation, in the same way as the production of the gall results from the depositing of the insect's egg.

Among the remedial measures which have been proposed for the cure of this gum-disease, there is one, adds Mr. Prillieux, "which, to my own knowledge, has been very effectual. This is the scarification of the bark. I have seen trees which were severely attacked by the disease, and unable to produce any but small and feeble shoots, completely restored to health, and sending forth fresh vigorous shoots, after longitudinal incisions had been made in the bark of the branches. The *rationale* is this: the elements necessary to the formation of new tissues have been transformed into gum, and they have to be brought back to their original destination." Hence a more powerful attraction (for the materials of the organism) must be in-

troduced than that of the gummy centres. The wounds necessitate the production of new tissues; and under this very active excitation the matters in reserve are compelled to form new cells, and cease to be drawn towards the gummy centres."

M. Messenger, in an article recently published in the *Revue Horticole* (1879, p. 174), strongly recommends the practice of making longitudinal incisions in the bark of trees, with a view to the encouragement of their growth. The process he describes as consisting of splitting the bark of a young tree in straight lines from top to bottom of the trunk ("*a summo trunco ad imum*," says Pallade, who first recommended it). Two, three, or four of these equidistant incisions are made without leaving any gap, which would cause strangling, the depth of the incisions being moderate, so as not to injure the inner bark. The knife used must be fine and sharp, so as to make a clean cut, and not to tear the sub-epidermic tissues.

So little is this operation known and practised, that there are very few manuals which make the slightest allusion to it, and one might seek in vain for a single author who has condemned it. At the most, we should find in the writings of the last century some reservation as to its application to trees which produce gum; but, observes M. Messenger, "I advise not to stop there, for experience has taught me that these reservations rest on imperfect observations, or purely speculative deductions, and that it is precisely the trees with gum which are the least able to do without the longitudinal incision. By its means I have often healed cases of gum-shedding, and I do not believe I have provoked it in a single instance.

"In the series of wounds which the gardener voluntarily inflicts upon his trees, there is none which is comparable to longitudinal incision, whether for safety as to its results, or for its harmlessness when practised without necessity or unseasonably; nor is there one which is more manifestly commanded by nature, for, contrary to the other wounds which are most frequently made to create obstacles to growth, this latter is an auxiliary thereto, since it supplies the default of certain functions temporarily interfered with by transplantation, sun-stroke, frost, and all other causes which conduce to the hardening or thickening of the bark."

In summing up the whole question, M. Mesager concludes that: the longitudinal incision replaces, by one act, those natural solutions of continuity scattered on the trunk, called lenticelles.

That trees with gummy latex (milky juice), especially Cherry-trees and Plum-trees, 'which have the first layers of the bark crosswise,' (Comte Lelieur, in *Pomone Française*, writes:— "Almost all trees have the epidermis or cuticle crosswise, after a prolonged stretching; but in Plums and Cherries this epidermis acquires a thickness and resistance comparable to that of leather") claim, especially when they have been transplanted, the unbridling of these layers.

Short longitudinal incisions made below but near the graft sometimes prevent the formation of the cushion or hump often seen at the point of union, by facilitating the enlargement of the stock, and allowing it to follow the base of the graft in its development, which is often rapid.

Applied at a later stage, the longitudinal incision "diminishes the gum, and often causes it to disappear." (Dalbret, *Cours Pratique de Taille*; Comte Lelieur, *Pomone Française*.) I have many times experienced this, and regard it as the surest means to be adopted against gumming.

It contributes mightily to growth in diameter, and accelerates thus the production of timber (*bois d'industrie*).

It serves, by the measure of the separation of the lips, as a criterion by which to appraise the vigour of the tree.

It never occasions the pouring-out of the latex in our Pomaceous and Amygdalaceous fruit-trees.

Lastly, if done without necessity, it produces no bad consequences.—M.

THE PEA CROP.

IT has seldom been my fortune to have such excellent crops of Peas as during the past and present months (July and August). Though later than usual in gathering the first crops (being the third week in June), they have well made up for lost time. About a score of kinds have been tried, and really not a bad lot is to be seen among them. Two kinds for special trial were Telephone and Telegraph planted side by side. Wonderfully fine Peas they are, very large in pod and pea, and of rich quality. Some say they are the same kinds, but they are not so with us. Telephone is taller in growth and the pod is more bent than those of Telegraph, and they are also a shade lighter in colour. When planting Peas, we do them as French Beans; but our soil being

strong tenacious clay, we cannot cover the seed with it, but use siftings of wood-ashes and some light soil mixed. The drills or ridges have to be formed with the spade, and where the Peas are sown they are placed zigzag over the surface about 4 inches apart; they are well mulched as soon as staking is done. They then grow with great vigour, the stems branching out and becoming a mass of pods. No mildew or withering-up is experienced.—M. T.

CHECKMATING THE CHAFERS.

IT is a generally spread idea that long and hard winters destroy a considerable number of insects and other enemies of the gardener, particularly snails. But insects and snails have both proved to us that they know how, when opportunity offers, to shelter themselves from the severity of the season. I shall not say that I have never seen so many snails as this season, but it is a fact that they abound.

On the other hand, the Chafers (May-bugs) are rare. It does not follow that we need not fear the ravages of the white worms, since they live three years in the ground before being finally transformed. But I have somewhere read that a very simple means exists for preserving cultivated trees and vegetables from their depredations. I have not yet adopted it, but give it for what it is worth.

The procedure consists in burying, at the time of preparing the ground, some plants of the cruciferous family, such as leaves and stumps of cabbages, turnips, colza, cresses, mustard, &c. All the crucifers, since they contain sulphur in considerable quantities, produce, in decomposing, a special gas, sulphuretted hydrogen, which exhales a strong odour of rotten eggs, and is mortal to the white worms. This discovery is due to a gardener of the village of Orsay (Seine-le-Oise), who had observed that the chafers never deposit their eggs in soils sown with different kinds of cabbage, and who had thus been able to preserve his strawberry-plants, when not a single root remained in the surrounding gardens.

This was his manner of proceeding. The beds destined for strawberry-culture were first planted with crucifers—cabbages, cauliflowers, Brussels sprouts, &c. In autumn, after clearing off the cabbages, the ground was sown in colza, the seed of which does not cost much, and which, ac-



The Nectarine Peach

Chromo. Strobant, Ghent.

cording to the gardener's expression, is sown as thick as the hair on a dog. On the approach of winter, the colza, with all that could be collected of leaves and stumps of cabbages, were coarsely chopped with the spade and dug in. The strawberry plants were planted on this ground thus prepared, and freely mulched with long dung. Not a single one was attacked, and the white worm did not show itself there.

Again, a plantation of dwarf apples (*pommiers de Paradis*) which had been twice devoured by the white worms, and re-established for the third time at the same place, after the ground had been prepared as described for the strawberry plants, was by this means completely preserved. It will be seen that this is a simple and easy remedy, which costs little, and is within the reach of all purses.—D. LOUMAYE, in *Bulletin Horticole*.

GOLD-LACED POLYANTHUS.

IN the June number of the *FLORIST AND POMOLOGIST*, there are some remarks on these fine old flowers, on which I should have made some comments at the time, but was prevented by other engagements. Now that potting-time has come round again, the subject recurs to my mind.

The remarks on exhibiting the Polyanthus, I consider most fallacious. It is stated that as it is a good rule to show an Auricula with one truss only, therefore, "so far as it secures the highest refinement in the pips, it is as desirable in the case of the Polyanthus." It is not so. An Auricula of the green, grey, or white-edged sections will not throw two good trusses from one crown except in rare instances, but a Polyanthus will throw four or five from one crown, all good. We are, moreover, advised to grow a Polyanthus with a single crown in a 7-in. pot, because that is the way they do it in the North. I have seen them shown at Manchester in that way, but the trusses were not so good as they have been seen in the South in 4-in. and 5-in. pots. No; a Polyanthus in a 7-in. pot with a single truss is neither striking nor beautiful; and my experience tells me they are better grown in 4-in. or 5-in. pots, since both the trusses and foliage are better.

Then as to cutting off all the trusses but one, we are told "that is the way in which gold-laced Polyantuses should be shown; it displaces mere bulk, and puts correct development in its stead, and puts growers on a better

footing of equality on the exhibition-table." I entirely disagree with this statement. It is a good standing rule in plant-culture to allow as many flowers on a plant as it will develop perfectly. A Polyanthus from a single crown will develop four or five trusses perfectly, if it is grown in a 5-in. pot. There is therefore no need to use a 7-in. pot, nor to thin-out any of the trusses.

In Polyanthus culture the amateur or cottager who can obtain the use of an ordinary garden-frame, has an equal chance with those who possess unlimited means, if he has the sense to cultivate his plants, the requirements of the Polyanthus being so simple. Ours have just been potted, single crowns in the pots recommended above. The plants do well out or doors until October, when they must be protected from an excess of wet by having glass lights placed over them; and they must not be suffered to become dry during the winter months.—J. DOUGLAS, *Loxford Hall, Ilford, E.*

THE NECTARINE PEACH.

[PLATE 500.]

ACCORDING to Dr. Hogg's *Fruit Manual*, this variety was raised by Mr. Rivers from the seed of a Nectarine named Grand Noir, which had been imported from Holland. It is a fine and very handsome Peach, producing large flowers, and having reniform glands. For the specimen from which our figure was prepared, we are indebted to the Rev. W. F. Radclyffe, who cultivates Peaches *con amore*, and whose great amount of success has been often recorded; we have ourselves been indebted to him for many of the Peaches figured in the *FLORIST AND POMOLOGIST* during the past few years. Of the variety now represented, Mr. Radclyffe notes that in shape it is a pointed oval, with the nearly smooth skin of a dusky rust-colour; and he adds that the leaves each bear several kidney-shaped glands.

The fruit grows to a large size, and is oval, with a nipple-like point, and well-marked suture. The skin is nearly smooth, approaching in this respect to that of a Nectarine, of a yellowish colour, becoming dull dusky red on the exposed side. The flesh is melting, semi-transparent, red next the stone, from which it parts readily; and it has a brisk, delicious, and remarkably rich flavour. It ripens about the middle of September.—T. M.

DYING OFF OF APRICOTS.

MUCH of this has been experienced this year ; the chief causes I believe to be the free growth of the roots into cold, damp soil, or into that which is very rich, preventing the wood from ripening early in the autumn. The growth then starts early in spring, and is attacked by frost ; the stems become paralysed, and though they do not show it much at first, they in due time die off, and this often happens just as the fruit reaches maturity.

After many careful experiments with lifting and planting, I find that much of this scourge of dying-off in Apricot-trees may be avoided if the trees are kept well above the subsoil and are thoroughly drained, with abundance of brick and lime-rubbish rammed tightly in the soil below the roots. When growth seems inclined to be extra-luxuriant, a portion of the roots might be lifted, very rank ones shortened, and the whole placed firmly again into healthy soil. This may be done any time between June and October. When much cutting is done to the wood, we look out for dying branches.—M. T.

POPULUS CANADENSIS NOVA.

IT is perhaps not too high praise to say that the new Canadian Poplar is one of the best and most useful hardy deciduous trees we have in cultivation. In the first place, it is the most rapid-growing of all our hardy trees, for we have ourselves seen plants which have made ten feet of growth in a season well furnished with branches. This will give some idea of its rapid development. It is, moreover, a tree well adapted to London, and may be seen in luxuriant health in the plantations on the Thames Embankment at Chelsea. By inference, therefore, it may be judged as suitable for other towns. From the treatment to which it has been subjected at Chelsea, it is evident that it will bear any amount of pruning, so that there is no difficulty in keeping it to any size or form required. It is probably also the best free-growing tree we have for planting in the smoky towns of the manufacturing districts in the North of England.

Its nearest affinity is with the Black Italian Poplar, and, in fact, it may be described, from its general appearance, as a very much improved Black Italian Poplar, possessing greater

vigour of growth, as well as larger leaves, which are retained fresh and green till a later period of the season. It is, in fact, in every way an improvement on that well-known and useful tree, and as a screen plant has no rival on record.—T. MOORE.



SELAGINELLA PERELEGANS.*

THIS very ornamental species of *Selaginella* is closely related to *S. inaequalifolia*, but the latter differs in its paler-

* *S. PERELEGANS*, T. Moore, *Gard. Chron.*, N.S., xi., 533. *S. bellula*, T. Moore, *Gard. Chron.*, N.S., xi., 173, fig. 25, non Cesati. Stem continuous, erect, 12 inches high, of a reddish hue, roundish, with two shallow furrows, branched to the base; branches alternate, the lower ones more distant, smaller, and less divided, the upper ones rather crowded, spreading, ovate in outline, with a stalk-like portion at the base, closely bipinnate, the secondary branches mostly forked near the end; leaves entire and glossy beneath, those of the main stem distant, of the branches more approximate, oblong, subfalcate, acute, broader on the anterior side of the prominent nerve, but more produced at the base and rounded on the posterior side, erectly spreading and deflected from the plane, the smaller leaves ovate, shortly acuminate, obliquely affixed, subparallel; leaves of the branchlets close set, oblong, with a straight upper and curved lower margin, the nerve falcately curving to the acute point; leaves of the forks obovate mucronate; spikes slender, quadrangular, $\frac{3}{4}$ -1 inch long.

coloured stem, and in its general aspect, the eye at once detecting a difference which is not easily expressed in words. It is, moreover, dwarfer and denser in its habit of growth, and much more fructiferous. The stems are erect, about a foot high, and nearly round, pinkish-red, the branches being alternate and horizontal,

nerve takes a falcate curve to the acute apex, the anterior side of the leaf broader but more cut away at the base, and the posterior side more produced towards the base and rounded. The small leaves on the upper surface are ovate, sharply acuminate, obliquely affixed, subparallel, of a deep green, as is the rest of the foliage.



SELAGINELLA PERELEGANS.

of a dull deep green, paler, and rather glossy beneath, the upper ones rather densely packed, ovate, with a stalk-like base, closely bipinnate, the secondary branches being mostly forked near the tips. The leaves set in the axils of the furcations of the stem, are obovate and bluntish, with a mucro; those of the stem are rather thinly scattered, those of the growing branches less so, and those of the branchlets rather closely set and deflected from the plane of the branch, so that its surface appears as if shallowly ridged. The latter are oblong, with the upper margin straight, and the lower margin rounded; the prominent

The fructifications are very copious, a quadrangular spike nearly, or quite, an inch long, terminating each of the numerous little branchlets. It has been imported from Ceylon by Mr. W. Bull, of Chelsea, to whom we are indebted for the illustration.—T. MOORE.

DECORATIVE CYPERACEÆ.

THE *Cyperaceæ* recommended by Herr Bouché from a decorative point of view (see p. 121) are the following:—

CYPERUS LUCIDUS, *R.Br.*, from New Holland, a very handsome plant, 24-28 in. high, with dark green glossy leaves, and panicles of

fuscous flowers. It requires to be kept under shelter through a cold winter.

CYPERUS DIVES, *Delil.*, which was received here through Dr. Schimper, from Abyssinia, is a highly decorative plant, with leaves 3-6 ft. long, and flower-stalks nearly 10 ft. high. It is a perennial, and must be wintered in the hothouse. When raised from seed, which it bears abundantly here, it takes two years to arrive at the flowering stage.

CYPERUS, *sp.*—This, which I received through Herr Schondorf, of Oliva, near Danzig, is one of the finest Cyperaceous plants for outdoor summer groups which I have seen. The culms grow to more than 6½ ft. high, and bear on their tops panicles 8 in. in diameter, covered with beautiful small golden-yellow flowers. The plant is perennial, and appears to increase easily by division, and also from seeds. Winter temperature, 10°-12° R. At first I considered this Cyperus to be *C. Iria*, L., or *C. xanthocomus*, Link, which are also pretty decorative plants, but of annual duration, therefore they cannot be the same.

CYPERUS VEGETUS, W., from South America, attains a height of 24-32 in., has bright green glossy leaves and green-flowered panicles. As it blooms the first year, it may be raised from seed annually, although it is perennial. Winter temperature, 10°-12° R.

CYPERUS CYLINDROSTACHYS, *Bockeler (Mariscus Tawari, H.B.K., C. incompletus, Hort.)*, comes from Caracas, attains a height of 24 in., and bears very elegant umbel-like groups of spikelets of a yellowish-brown colour. It is perennial, and requires in winter 12°-14° R.

CYPERUS FLABELLARIIS, *Schrad.*, is said to be a native of the Cape of Good Hope. It has in its growth a very great similarity to *C. alternifolius*, but is in all parts smaller and more elegant, so that it seldom gets over 12 in. high, and for that reason it is well adapted for the edges of groups. Winter temp., 10°-12° R.

CYPERUS TEXTILIS, *Thbg.*, (*C. pungens, Hort. Berol.*), from the Cape of Good Hope, also belongs to the section of *C. alternifolius*. It grows about 4 ft. high, and is, on account of its peculiar growth, to be recommended. Winter temp., 10°-12° R.

CYPERUS ALBO-STRIATUS, *Schrad. (C. Braunii, Vatke)*, became established here simultaneously with *Scirpus natalensis*, through an importation of plants which the Acclimatisation Society of this country received in 1869 from Port Natal, both plants having germinated, on a stem of *Encephalartos villosus*, which came into the hands of Herr König, head gardener to the Privy Counsellor Ravené. The proprietor, a well-known promoter of horticulture, noticing the little plants, commended them most particularly to the care of his gardener, and we have thus to thank him for the possession of two valuable decorative plants. One ought to

tend with carefulness, till he has convinced himself of its value, everything that germinates in foreign soil. *C. albo-striatus* attains a height of about 12-14 in., and has rather broad leaves of a light-green colour, and an umbel-like spreading inflorescence, with small whitish flowers, and is a very elegant decorative plant, not only for the open ground, but also for flower-stands, since it endures the confinement of a room very well. It should be kept during winter in a light hothouse at 10°-12° R.

SCIRPUS NATALENSIS, *Bouché*, from Natal, introduced by the Acclimatisation Society, has been grown without name in a few gardens since 1869, and was at first little cared for. Its habit reminds one somewhat of a *Pandanus*. The dark-green shining leaves grow from 28 in. to 32 in. long, and spread themselves elegantly on all sides. The flower-stalks, which grow over 40 in. high, bear in close heads small blackish flowers. I have used this plant (for outdoor bedding) since 1872. It, moreover, grows very well in a room, and as it can be kept therein for several years, it has become a popular subject for flower-stands. In order that it may keep better in such situations, it ought to be placed out of doors in the summer, under which conditions the leaves grow stiffer and more vigorous. It likes plenty of moisture, and hence, when grown indoors, it should be stood in a pan with water. Winter temp., 10°-12° R.

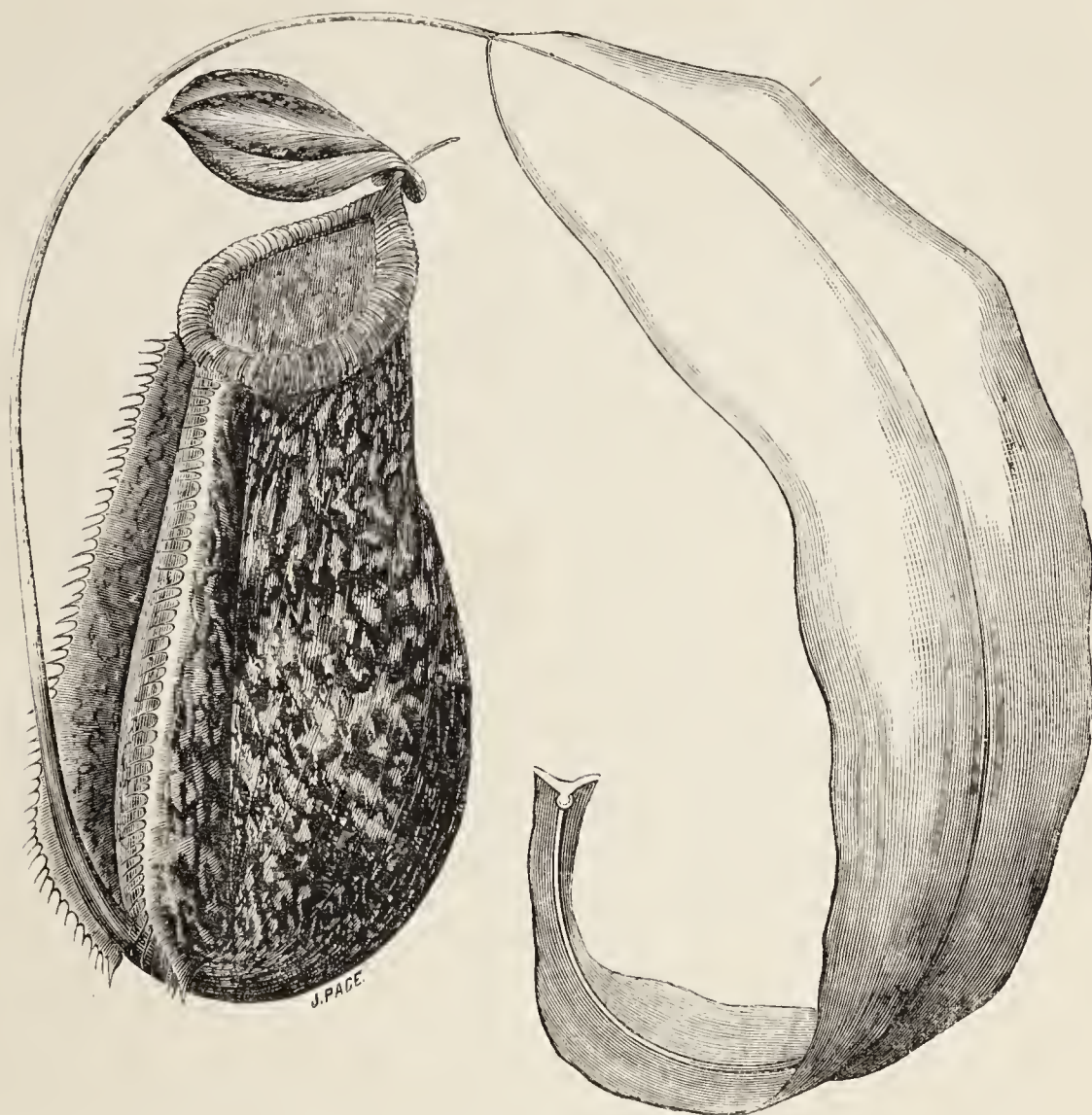
CAREX PENDULA, *Huds. (C. maxima, Scop.)*, native of Europe, produces on 40-in. high stalks spikes of male and female flowers, of which especially the latter are very long, and have a neat appearance. It is particularly fit, on account of its elegant growth, for the decoration of the margins of lakes and streams.

NEPENTHES STEWARTII.



NE of the fine hybrid Pitcher-plants obtained within the last few years in the nursery of Messrs. Veitch and Sons, of Chelsea, to whom we are indebted for the use of the woodcut.

We learn that it was obtained as a cross between *N. Phyllamphora* and *N. Hookeri*, which latter is a form of *N. Rafflesiana*. The plant is said to be free-growing. The leaves have the light, cheerful green of *N. Phyllamphora*, combined with the coriaceous texture of *N. Hookeri*. The pitchers are elegantly flask-shaped, intermediate in size between those of the two parents, and furnished with rather broad ciliate wings in front, and a prominent rib on the opposite side. In colour, they are of a deep green, densely spotted and clouded with crimson, the style of marking being well represented in the accompanying figure.—T. MOORE.



NEPENTHES STEWARTII.

VILLA GARDENING.

October.

AS we write, there is the delightful enjoyment of something like summer weather—all the more welcome because so long waited for. Gardening is now something like a pleasurable occupation, for the days are warm, and the nights mild and genial. Would that it could last so through the month! Well may we echo the appeal of the poet:—

“Fade not so soon! The calm, untroubled sky
Is fair with colour, and is glad with light;
Still is the stubble golden, and the night
Full of the summer’s perfume. Why
Should ye that are so fair, make haste to die?”

A fine and warm October would do much to redeem the cold moist character of the summer, though it cannot bring back the lost harvest of fruit, &c.

Greenhouse.—If any of the usual occupants of this house are still remaining out of doors, they should now be housed without delay. If it can be done, the greenhouse should be

thoroughly cleansed on the inside, so that when the plants are rearranged for the autumn everything may be clean and orderly. It is unwise to crowd the plants. We shall ere long be having dull and sluggish weather, and the more room there is for the air to circulate the better. During mild weather a free ventilation should be given, and in the event of the temperature being as low as 40°, the house should be shut up at night while the weather keeps dry and mild. Water may be freely given to such plants as are in a growing condition; those that have done their work, and are becoming dormant, should be kept rather dry, but not dry enough to injure them; and when watered, should receive enough to thoroughly moisten the ball of roots quite through. The plants are greatly benefited by going over them occasionally, and picking off the dead leaves, removing useless shoots, and keeping the surface-soil stirred. A little of some manure like Clay’s Fertiliser greatly assists to keep in bloom plants of *Fuchsias*, *Zonal Pelargoniums*, &c., that have become pot-

bound. Early *Cyclamens*, and especially *Chinese Primulas*, should be coming on into bloom, and need every encouragement. The flower-trusses of the earliest should be allowed to remain to give some early bloom. They should be picked off from others to provide a succession. A syringing or two between the hours of 10 a.m. and 2 p.m. will be of great advantage, while the weather is sunny and growing; when it is dull and cold, syringings should be dispensed with.

Cold Frames.—The free growth made by *Auriculas*, *Polyanthuses*, and *Primulas* of various kinds is inducing them to send up autumn trusses. It is best to pinch out the trusses of bloom from any good varieties of the former, that they be not weakened in their summer blooming. Some late seedling plants of *Primula cashmeriana* that were too small to flower last spring are now throwing up fine trusses of bloom, and will be very pretty and useful for some time to come. From all these decaying leaves should be removed, and the surface-soil stirred. *Cinerarias* require attention, the leading plants need repotting, and should be treated to a good compost. They must also be well watered, kept near the glass, and have plenty of air. In a warm greenhouse, *Cinerarias* can be had in bloom in November and December, and very pretty they are. In dull weather aphids and mildew are apt to affect the plants; the former can be got under by smoking, the latter, by dusting the undersides of the leaves with powdered sulphur. *Calceolarias* also require attention; they should be well established in 24-sized pots by the autumn; they also want room and plenty of air and water. Some *Hyacinths*, *Tulips*, *Crocus*, *Narcissi*, &c., should be potted in a rich compost, ready for blooming in early spring. They are so pretty as to be indispensable. The Villa Gardener should add to his spring-flowering bulbs some *Ixias*, *Sparaxis*, early *Tritonias*, and *Babianas*. These are very pretty Cape bulbs, that can be grown without much difficulty, putting 9 or 12 bulbs of each in a good-sized pot thoroughly well drained, and using a fine, light compost, made of sandy loam, a little peat, leaf-mould, and sand; standing the pot in a cold frame till they have grown several inches, and then taking them to the greenhouse. The varieties of *Primula cortusoides amona* should now be repotted in a light, rich soil; they do not require large pots as they root near the surface, and it is very important that the pots should be well drained. Anything should be repotted that requires it, the plants kept neat and clean, and everything in good order.


Flower Garden.—Just now we are getting a good deal of enjoyment out of the Flower Garden, and all are hoping that summer will linger yet a little longer ere its flame deepens

to autumn's crimson. Those who propagate the ordinary bedding-plants should have their cuttings in ere this; if not, it should be proceeded with at once. If put into store-pots and boxes, and kept shaded while the weather is bright, they will root during the autumn, and be ready for potting in March. Many things are now in full bloom, such as *Mari-golds*, both French and African; spring-sown *Pentstemons* and *Antirrhinums*, *Petunias*, *Phlox Drummondii*, *Zinnias*, *Dahlias*, &c., that we may well desire a prolongation of the fine weather. Double and single *Primroses*, *Polyanthuses*, Alpine *Auriculas*, double *Daisies*, &c., should be divided and replanted, giving them some good, free soil about the roots, and they will make a fine growth during the autumn. Plantations of *Canterbury Bells*, *Sweet Williams*, *Foxgloves*, *Lychnis*, &c., should be planted out also in rich soil, so that they may get well established. Bedding *Violas* and *Pansies* should be divided and planted in store beds for furnishing the flower-beds for spring.

Kitchen Garden.—Whenever the weather is dry, the hoe should be kept going among all growing crops, in the hope thereby to loosen the hard ground somewhat. If dug over lightly with a fork, taking care not to loosen the roots of the plants, so much the better. All decaying vegetable matter should be got rid of on the rubbish-heap, and burnt when it can be done. Gardening work having got into arrears, advantage should be taken of the fine weather to clip box-edgings, weed walks, &c., also to dig and manure any spare pieces of ground. *Potatoes* should be lifted without delay, and kept carefully looked over; the disease is working much among the lifted crops, and many put away apparently sound have rotted. A few *Cauliflower* plants can be put out under hand-glasses; and some hardy *Cabbage* and *Cos Lettuces*, pricked out on a warm sheltered border. *Celery* should be finally earthed-up. The *Onion* crop should be left as long in the ground as possible; they will grow while open weather lasts, and then, when that is over, be harvested.

Fruit Garden.—Alas! there is but little fruit in many gardens to gather, and some of it cannot ripen. We have seen *Peaches* and *Nectarines* that were as hard as bullets and green as grass. Many *Pears* cannot become matured, and *Apples* are dropping before they have ripened. If the fine open weather lasts, the hardy fruit crops will be helped thereby, and may be left to enjoy the advantage of it. *Strawberry* beds should be cleared out, the runners removed, the ground forked, and mulched with dung and leaves. It is not too late to make new *Strawberry* beds, provided the runners be strong. All kinds of fruit-trees may be planted as soon as the leaves are off or partially dropped.—SUBURBANUS.

GARDEN GOSSIP.

 HE ANNIVERSARY MEETING of the PELARGONIUM SOCIETY was held at Chiswick on September 23rd, when the election of committee and officers for 1880 took place. E. B. Foster, Esq., was elected Chairman, and W. B. Kellock, Esq., Vice-Chairman, for the year ensuing; while the Hon. Treasurer, Dr. Denny, and the Hon. Secretary, Thomas Moore, Esq., F.L.S., were re-elected, and the committee was reconstituted. The report of the committee was adopted, from which document we learn that the Society is making steady progress, and that the Exhibition, which took place at South Kensington on July 8th, was the best which has been held under the auspices of the Society. The determination formed at the annual meeting in 1878 to award Certificates to Seedlings had also been fully justified by the result, as a large number of new flowers was staged, and certificates of the First Class had been awarded to the following varieties:—Show Pelargoniums: Joe and Charlotte, from Rev. A. Matthews; Emperor William, Invincible, Sensation, The Baron, The Pope, Alice, Flag Captain, and Fireball, from E. B. Foster, Esq. Fancy Pelargoniums: Electric Light and Sarah Bernhardt, from Mr. C. Turner. Decorative Pelargoniums: Black Prince and Lady Isabel, from Messrs. J. and J. Hayes; Princess of Wales, from W. Bull; Miss André, from Messrs. T. Jackson and Son; and Arab, from Messrs. F. and A. Smith. Zonal Pelargoniums: Leander, Romeo, Allegro, Dudu, Horatius, and Commander-in-Chief, from Dr. Denny; Lizzie Smith, Edgar Catlin, and Fanny Thorpe, from Mr. J. Catlin. Double-flowered Zonal Pelargoniums: Dauntless and Pioneer, from Dr. Denny. The balance-sheet showed a surplus of £70 15s. 8d., after all expenses and prizes had been paid.

— THE WOOLHOPE NATURALISTS' FIELD CLUB hold their last field meeting of the year at Hereford on October 2nd, for a foray among the funguses. The foray will be made in the woods, at Foxley, by the kind permission of the Rev. G. H. Davenport. The members and visitors will leave the Barton station with the 9.20 a.m. train, and return from the Moorhampton station with the 2.37 p.m. train, to reach the Museum-room of the Free Library a few minutes after 3 o'clock, where the funguses found will be exhibited and discussed. A meeting of the members will be held in the Woolhope Club-room at 3.20 p.m. to elect the officers for the ensuing year, and for the transaction of such other business as may arise. The dinner will take place at the Green Dragon Hotel, at 4 o'clock p.m., when some edible funguses will be served, cooked from the club recipes. A soirée will be held at the house of Thomas Cam, Esq., at 8 p.m., to which he invites all who may attend the meeting.

— THE BORNEAN BUREIDGEEA NITIDA is a novelty of considerable interest and beauty. It is a new generic form of the Zingiberaceæ or Gingerworts, grows from 2 ft. to 10 ft. high, and flowers freely during the summer. The stems are somewhat slender, erect, scantily furnished with bright, glossy green leaves, which are of leathery texture, and attain from 4 in. to 6 in. in length. The flowers are produced in terminal panicles, consisting of from 12 to 20 blossoms, from 1½ in. to 2 in. across, the rich orange-scarlet segments of which are arranged in a triangular form. It was discovered by Mr. F. W. Burbidge, the recently appointed

curator of the Dublin University Botanic Garden, in compliment to whom it has been named by Sir Joseph Hooker. The plant grows in shady forests, at an elevation of from 1,000 ft. to 1,500 ft. in N.W. Borneo.

— LEMONS, writes Mr. W. Horne in the *Albany Cultivator*, are of more importance to the rheumatic and dyspeptic than is generally understood. To buy when cheap is an object; to keep them for a length of time so as to be fit for use (and good medicinally), is also quite an important point. I do not like the packing in barrels; they often spoil without decaying in this form. I have tried many preservatives, and find the simplest and best to be sour milk. Cover them in any kind of clean vessel, with clear sour milk, and lemons will keep fit for use all summer. The flavour is very slightly changed, but in every other requisite they are perfect, being wholesome and good.

— WRITING of PETROLEUM STOVES, a correspondent of the *Irish Farmers' Gazette* observes that there is a most unfair prejudice existing against the use of petroleum with plants. The most delicate ferns in his sitting-rooms have not been injured by petroleum lamps, and for syringing plants liable to attacks of aphids, a little mixed with soft water is an excellent remedy. He thus relates his experience:—"My conservatory is 20 ft. by 18 ft., and rather lofty, but as it lies between two sitting-rooms, it is not as much affected by cold as one only attached outwardly would be. The stove used was a Duplex, the dimensions as follows:—Diameter of base, 11½ in.; ditto of boiler, 6½ in.; height to top of lid, 24 in. One quart of petroleum burned twenty-four hours; cost, 3d. The price of the stove was 25s. In very damp weather, I had not the boiler filled more than once in the twenty-four hours, as it caused too great moisture."

— THE attacks of the RUST MAGGOT UPON CARROTS have been troublesome during the past season or two. As a remedy, Miss E. Ormerod writes:—"I have found great benefit from watering with a very dilute application of the fluid sold under the name of 'Soluble Phenyle,' by Messrs. Morris and Little, of Doncaster. Towards the end of June the carrots in my garden at Isloworth were so severely attacked that, being past hope from any common remedy, I tried this fluid in various proportions, usually about a tablespoonful to a gallon of water, watering the ground frequently. The insect attack was very soon checked, and the plants started into healthy foliage, and the carrots that sprang on the infested ground, after the application, were straight and perfectly uninjured. The check to the rust larvæ was complete. The main ingredient in this fluid is nearly allied to carbolic acid, and its use chiefly as a disinfectant and for destroying parasitic insect-attack in animals, but it appears to act as a stimulant to vegetation, whilst poisoning the insect-feeder."

— THE new STRAWBERRY DÉLICES DE PERMILLEUX, raised by M. Permillieux, horticulturist at Oullins (Rhône), and which appears to have been obtained from the Victoria, hybridised with Triomphe de Liège, is reported by the committee who certificated it, as being hardy, with good foliage, the fruits earlier than those of the Triomphe de Liège, large, flattened, sometimes conical, the seeds projecting, of a deep red colour; the flesh rose-

coloured, solid, juicy, sugary, and very fragrant. On the recommendation of the committee (MM. F. Gaillard, Rougy, Berthier, Monin, and Clausier), it was awarded a silver medal.

— **THE NYMPHÆA ALBA ROSEA** (more correctly, it seems, *N. ALBA RUBRA*), figured in our last volume, has been named *N. Caspary* by M. Carrière, who has also published a figure of the plant in the *Revue Horticole* (1879, p. 230). The plant has had a variety of names; thus Professor Caspary, of Königsburg, called it *N. alba sphaerocarpa rubra*, and M. Duchartre, *N. sphaerocarpa rubra*. Whatever name it bears, it is, as M. Carrière observes, a very fine plant. According to the account given, it is a variety of *N. sphaerocarpa*, a plant nearly related to *N. alba*, but distinguished by its more rounded fruits, the present variety differing in the carmine-rose colour of its interior petals. It is described as being vigorous and hardy, with large, slightly undulated leaves, almost entire at the edge, and attached by red petioles; the peduncle large, ferruginous, the buds red, the flowers tender rose, often somewhat veined with violet. It commences to flower in June, and continues flowering almost until the frosts. It was discovered in a lake near to Tweden, village Kammar, near Nerika, in Sweden, in 1856. According to M. Froebel, it is a very floriferous plant, commencing to bloom eight or ten days before *N. alba*, is completely hardy, and requires the same culture as *N. alba*. He adds that it reproduces itself by seeds, but M. Carrière wisely observes that those who wish for a perfectly true stock should increase it by division, reserving the seeds for the production of varieties, of which some might chance to be deeper in colour than the parent. It will be a great acquisition for the embellishment of our ornamental waters.

— **At the recent exhibition of the Clay Cross Horticultural Society**, a dish of a very choice Tomato was shown under the name of the **CHATSWORTH TOMATO**, by Mr. Thomas Speed, of Chatsworth Gardens. It is of enormous size, and very handsome. Mr. Speed states that it is a seedling from Criterion; that while it is a strong grower, it is yet very early and remarkably free, and it is strongly recommended by him as a variety to grow in order to secure an early supply of fruit. In form the fruits resemble those of Hathaway's Exeelsior, and they are of a deep bright red colour.

— **DR. A. W. SAXE** propounded the following **REMEDY** for **MILDEW** at a recent meeting of the Academy of Sciences in San Francisco. From experiments made by him during the past few years, he concluded that a solution of copper, sprinkled over grape-vines just before the starting of the buds, is far better than sulphur to prevent mildew, being cheaper and more easily applied. On the contrary, during no season had he seen any sign of mildew when he used this solution, but one year he neglected to apply it, and the result was that the vines were badly affected.

— **A CAPITAL** way of **UTILISING GREEN GRAPES** has recently been described as being practised by Mr. Wildsmith, gardener to Lord Eversley. The berries are placed with a little water in an oven where a suitable temperature is maintained, and afterwards strained. The juice is boiled down with sugar, and forms a fine red trans-

parent jelly of excellent flavour, as we (*Journal of Horticulture*) can testify, having tasted some at the last meeting of the Royal Horticultural Society.

— **A FRENCH** contemporary states that if a little **CHLORIDE OF LIME** be spread on the soil, rats, mice, and insects will at once desert it. Plants may be easily protected by it from insect plagues, by simply brushing over their stems with a solution of it. It has often been noticed that a patch of land which has been treated in this way remains religiously respected by grubs, while the unprotected beds round about are literally devastated. Fruit-trees may be guarded from the attacks of grubs by attaching to their trunks pieces of tow smeared with a mixture of chloride of lime and hog's lard, and ants and grubs already in possession will rapidly vacate their position.

— **AN** interesting **NEW SARRACENIA** has been raised in Messrs. Veitch and Sons' Nursery, and was recently exhibited at South Kensington, under the name of *S. formosa*. It is the result of a cross between *S. psittacina* and *S. variolaris*, and exhibits in a remarkable way the intermediate character of both parents. It is considerably taller in growth than *S. psittacina*, with its parrot's-head-like pitcher and lid of a pale green tint, beautifully reticulated with crimson veins. It is, moreover, robust in habit, and in this respect is similar to *S. variolaris*.

Obituary.

— **WILLIAM WILSON SAUNDERS, Esq., F.R.S.**, died at his residence, near Worthing, on September 13th, in the 70th year of his age. By his death horticulture has sustained a severe loss, and his friends a profound sorrow. We cannot point to any one in our times who possessed a greater love for plants, or a more thorough knowledge of them and their requirements. His collections at Wandsworth, afterwards at Reigate, and latterly at Worthing, were remarkable, not only for extent, but for the knowledge and discriminating zeal with which they were got together and maintained. The dispersion of the Reigate collection a few years ago was one of the greatest calamities that has recently befallen horticulture; but such was his love for plants, that no sooner was he established at Worthing, than he began again to form a collection. For many years Mr. Saunders was a tower of strength to the Royal Horticultural Society. He was one of the very few supporters of the Society who had a thorough and extensive knowledge of gardening and its requirements, and he did his utmost for many years to promote them. Of the Linnean Society Mr. Saunders was a hardly less prominent member. His memory will be reverently cherished by all who knew him.

— **MR. D. D. DAVIES**, for upwards of 40 years gardener to the late and present Lord Bridport, at Cricket Chard, died recently from lock-jaw, supervening upon an injury sustained by falling from a ladder, while engaged in the decoration of a ball-room, previous to a wedding festivity. He was celebrated as a Pine-grower, and sent up to the Royal Horticultural Society, some years ago, a plant with three beautiful fruit growing upon it, the weight of the three being 27 lb. He was much respected by the family he served so faithfully and so long.



3

4

Grapes

Cherry

1. Black Hamburg 2. Green Thomson

3. Madreselva 4. Black Queen

SELECT BLACK GRAPES.

[PLATE 501.]

THE accompanying plate has been prepared as an illustration of some of the most valuable of the Black Grapes now in cultivation. The varieties will be described in full in the admirable essay on Vines and Vine-culture, by Mr. Barron, Superintendent of the Royal Horticultural Society's Garden at Chiswick, now being published from time to time in our pages. They have been very faithfully represented by Mr. Fitch, by whom the original drawings were made, and have been carefully reproduced in chromo-lithography by Severeys, of Brussels. The outline figure at the back represents in each case the general contour of

the bunch, but on a reduced scale, while the coloured figure shows the natural size and appearance of the berries when well cultivated.

It only remains in this place to add the names of the varieties figured, which are as follows:—

Fig. 1. BLACK HAMBURGH, the universal favourite.

Fig. 2. GROS COLMAN, sometimes called *Gros Colmar*, a grand late variety.

Fig. 3. MADRESFIELD COURT, an excellent summer grape.

Fig. 4. LADY DOWNE'S SEEDLING, one of the best late kinds.—T. MOORE.

VINES AND VINE-CULTURE.

CHAPTER XVII.—THE VARIETIES OF GRAPES AND THEIR CLASSIFICATION.

THE varieties of Grapes are so numerous, and a large proportion of them nearly, if not quite, unknown, and so unsuitable for cultivation in this country—being mainly used for wine-making—that it is not desirable, even were it possible, to attempt in this place a complete enumeration of them. We shall rather confine ourselves to noticing such of the different varieties that are or have been grown in this country, as are distinct, or have some supposed merit attached to them.

In a broad sense, the cultivated Grapes are divisible into two great families,—

The EUROPEAN, including all the varieties of Grapes of the Old World.

The AMERICAN, including those belonging to America, or the New World.

These two series of Grapes are very distinct, not only in constitution, but also in foliage and fruit; but as the American vines are not cultivated in this country for their fruit, if we except the Strawberry Grape and an occasional plant of the Catawba or Isabella, it will be unnecessary to allude to them further.

There has been no very definite classification of Grapes yet adopted, although the desirability of some simple and popular way of grouping the different varieties, whereby those who have only a limited knowledge may comprehend something of the nature or character of the variety named is self-evident, and the want of it has long been felt. Thus, for example, the

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terms Muscat and Sweetwater are pretty well understood, as conveying a knowledge of the flavour and general character of the respective varieties to which they are attached; and it is by an elaboration of this idea that we propose to arrange them into three great classes or sections—

Firstly, by the flavour of the fruit—

1. Sweetwater Grapes
2. Muscat Grapes
3. Vinous Grapes

Secondly, by the colour of the fruit—

- A. Black or purple
- B. White green or yellow
- C. Red or tawny

Thirdly, by the shape of the fruit—

- * Oval
- ** Round

making, in all, eighteen well-marked groups or subdivisions. In this way, one would be enabled to speak of the Chasselas Musqué, for example, as a round, white, Muscat Grape; of the Black Hamburgh, as an oval, black, Sweetwater Grape; and of the Gros Colman, as a round, black, Vinous Grape, &c.

EUROPEAN GRAPES.

Class I.—SWEETWATER GRAPES.

Varieties with sweet, sugary, or saccharine flavour, the juice thin, but pleasant, varying in sweetness; skin generally thin and tender. They are mostly early varieties, and ripen freely. Those termed Muscadines are here in-

cluded, as well as the greater portion of what the French term Chasselas :—

A.—*Berries Black or Purple.*

* *Oval.*

1. Black Hamburgh or Frankenthal.
2. Black Monukka.
3. Black Prince.
4. Œillade Noire.
5. Trentham Black.

** *Round.*

6. Black Bordeaux.
7. Black July.
8. Black Muscadine.
9. Black Corinth.
10. Miller's Burgundy.
11. Mill Hill Hamburgh.

B.—*Berries White Green or Yellow.*

* *Oval.*

12. Bicane.
13. Cabral.
14. Foster's White Seedling.
15. Grove-End Sweetwater.
16. Golden Champion.
17. Madeleine Royale.
18. Scotch White Cluster.
19. White Romain.

** *Round.*

20. Buckland Sweetwater.
21. Chasselas de Florence.
22. Chasselas Royal.
23. Chaptal.
24. Ciotat.
25. Duke of Buccleuch.
26. Dutch Sweetwater.
27. General della Marmora.
28. Golden Hamburgh.
29. Gros Romain.
30. Pitmaston White Cluster.
31. Prolific Sweetwater.
32. Royal Muscadine.
33. Stillward's Sweetwater.
34. White Frankenthal.

C.—*Berries Red Tawny or Variegated.*

* *Oval.*

35. Ahbee.

** *Round.*

36. Aleppo.
37. Chasselas Rose.
38. De Candolle.
39. Gromier du Cantal.
40. Lombardy.
41. Tokai des Jardins.

Class II.—MUSCAT GRAPES.

Varieties with musky or perfumed flavour, generally with firm flesh. The larger varieties, as a rule, require a warmer temperature to ripen them than the Sweetwaters. The Frontignans are included amongst the Muscats :—

A.—*Berries Black or Purple.*

* *Oval.*

42. Ingram's Hardy Prolific.

43. Madresfield Court.

44. Muscat Hamburgh.

45. Mrs. Pince.

** *Round.*

46. Angers Frontignan.
47. August Frontignan.
48. Black Frontignan.
49. July Frontignan.
50. Jura Frontignan.
51. Muscat de Lierval.
52. Meurthe Frontignan.
53. Sarbelle Frontignan.

B.—*Berries White Green or Yellow.*

* *Oval.*

54. Ascot Citronnelle.
55. Canon Hall Muscat.
56. Ferdinand de Lesseps.
57. Muscat of Alexandria.
58. Muscat Bifère.
59. St. Laurent.

** *Round.*

60. Ascot Frontignan.
61. Auvergne Frontignan.
62. Chasselas Musqué.
63. Dr. Hogg.
64. Duchess of Buccleuch.
65. Early Silver Frontignan.
66. Mrs. Pearson.
67. Ottonel.
68. Saumur Frontignan.
69. Trovère Frontignan.
70. White Frontignan.

C.—*Berries Red or Tawny.*

** *Round.*

71. Grizzly Frontignan.
72. Madeira Frontignan.
73. Muscat Champion.

Class III.—VINOUS GRAPES.

Varieties with a strong vinous or somewhat harsh flavour, and thick skin. They mostly require a considerable amount of heat and time to ripen them. Generally termed late grapes.

A.—*Berries Black or Purple.*

* *Oval.*

74. Alicante.
75. Alnwick Seedling.
76. Black Morocco.
77. Gros Maroc.
78. Morocco Prince.
79. Royal Ascot.
80. West's St. Peter's.

** *Round.*

81. Aramon.
82. Espiran.
83. Dutch Hamburgh.
84. Gros Colman.
85. Gros Guillaume.
86. Lady Downe's Seedling.

B.—*Berries White or Yellow.*

* *Oval.*

87. Chayoush.

- 88. Golden Queen.
- 89. Royal Vineyard.
- 90. Syrian.
- 91. Trebbiano.
- 92. Waltham Cross.
- 93. White Lisbon.
- 94. White Tokay.

** Round.

- 95. Raisin de Calabre.
- 96. White Lady Downe's Seedling.
- 97. White Niece.

AMERICAN GRAPES.—These are all more or less perfumed, and have a peculiar foxy taste, with gelatinous flesh.

A.—Berries Black or Purple.

* Round.

- 98. Catawba.
- 99. Strawberry.

This Synopsis of Select Varieties includes all the Grapes at present known which we think most deserving of attention on some ground or other, though for general utility, as will hereafter appear, the number will be reduced within very narrow limits. We shall next offer some descriptive and cultural notes on the several varieties, taking them in alphabetical order for facility of reference.—A. F. BARRON.



BLACK PRINCE GRAPE, No. 3.



RAISIN DE CALABRE GRAPE, No. 95.

[The clusters in the above figures are one-third the natural size; the detached berries and leaf-margins natural size.]

A FEW CHOICE HARDY EVERGREENS.

MT the present season of the year, many persons may be intending to overhaul their existing shrubberies, or to form new ones. The time is therefore opportune to

refer them to some of the materials suitable for this purpose, which may be found in the nurseries devoted to this class of plants. The Coniferæ occupy a prominent position

amongst hardy evergreens, and many choice subjects may be selected from amongst them. We do not purpose to refer to the better known species, amongst which the Piceas stand pre-eminent, but rather to invite attention to some of those which are less known.

One of the most interesting is the Blue Spruce of Colorado, *Abies Parryana*,* as it is now called. This beautiful plant is very symmetrically branched, and furnished with spreading needle-shaped leaves, so intensely glaucous as to impart to it a distinctly blue colour. It has been referred to *Abies Menziesii* and to *A. Engelmanni*, but we are much inclined to think it is distinct from either. Certainly, when regarded as an ornamental tree, the glaucous form must be set down as being by many points the best and handsomest of the Spruces. Many of the seedlings, however, come green, and the rest vary in the glaucous colouring.

Two very pretty varieties of the Hemlock Spruce, *Abies canadensis*, have been introduced to the Knap Hill collection. One of these, var. *alba*, has the tips of the young growth in the early summer for about half-an-inch in length almost pure white, producing almost as gay an appearance as if the plant were covered with blossom. The other, var. *pendula*, is of weeping character, the slender branches being gracefully drooping. Both of these will take a high position amongst plants of this class.

A very elegant little fir is the *Abies Hookeriana*. It forms a slender pyramidal-growing species, with moderately spreading branches, and short silvery leaves, and is altogether a distinct-looking ornamental plant.

The *Abies orientalis*, though not exactly new, is a little known, little grown, but most graceful tree, comparable to a very slender Norway Spruce. It has been far too much neglected by planters, but is one which it is most desirable to introduce largely, on account of its comparatively small size, and its strikingly refined and elegant character.

Amongst the dwarf tufted-growing Firs, *Abies excelsa pumila*, a rather stout-growing, but close dwarf form, may be commended. It forms tussocks of 1½ foot high, and about 3 ft. over, close-set and uniform in character, and is a plant well adapted for use in terrace

gardens, and as a bold, shrubby edging to carriage-drives.

The Knap Hill Cypress, *Cupressus Lawsoniana erecta viridis*, together with the varieties *gracilis* and *nana*, was picked out of the first large batch of seedlings of this species which was raised in this country. The inimitable Knap Hill Cypress is, without exception, the handsomest evergreen shrub at present in cultivation, being the finest and most slender in ramification, the most perfect in shape, of the richest and most enduring verdure, and altogether in its style of growth, and without the use of the knife or shears, so symmetrical and refined in character, as to take the topmost place in the ranks of ornamental evergreens. This remarkably symmetrical growth is not indeed fully shown in the very young state, but begins to develop itself in specimens of three or four feet in height, and these go on improving in beauty as they increase in bulk. It is necessary to add that one or two much inferior sorts have been sent out under the same name.

Amongst the choicer Conifers, we should not omit to include *Cupressus Lawsoniana lutea*, as it is without doubt the best of all the golden Cupresses, being distinctly flushed with colour, of free growth, and what is equally, if not even more important, not being subject to burn, as are all the other yellow variegated forms of this plant at present known.

Another good variety of this Cypress is that called *Cupressus Lawsoniana pyramidalis alba*, in which the tips of all the branchlets are pale-tinted, and the leaves glaucous, so that it takes on a silvery hue, which is striking and distinct. This is not only a slender and graceful plant, but one which is free-growing in habit, and does not burn.

The well-known *Thuja orientalis aurea*—of which the original seedling plant now growing in the Knap Hill Nursery, where it originated, forms a large, dense mass, 10 ft. in height, and proportionate in bulk—is one of the most popular of dwarf hardy shrubs—so popular indeed that the progeny of the parent plant must now be reckoned by millions.

Of more recent introduction and of Continental origin, is the *Thuja orientalis semper-aurea*, which is of a deeper golden hue, the colouration being, moreover, continuous through-

* Or, as it will probably have to be called, *Picea Parryana*.

out the year. It is really an acquisition, the habit being a copy of that of *T. aurea*.

Mr. Jackman has recently introduced another variety, of a similarly dense habit, which he calls *Thuja orientalis densa glauca*. The habit is

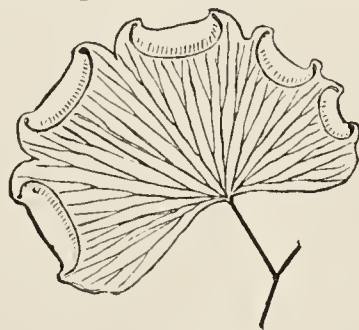
dwarf and compact, the outline conical, the growth consisting of numerous slender, closely compacted branchlets of a pretty glaucous tint. It will be a useful plant for introducing along with either of the preceding.—T. MOORE.



ADIANTUM WILLIAMSII.

THIS handsome greenhouse evergreen Fern has somewhat the aspect of *A. chilense*. It is, however, quite different. The straight base and equal-sided wavy pinnæ are peculiar. The growth of the plant is free and vigorous. It has a castaneous stipes from six to eight inches long, and golden at the base. The rachis is somewhat zigzag, and about a foot long. The fronds are tripinnate, triangular in outline, membranaceous, bright green, glabrous, the lower pinnæ stalked, about 4 in. long, and of an ovate figure. The pinnules are about half-an-inch broad, and attached by pedicels about one-fourth of an inch long, so that the parts are nowhere crowded; they are mostly

semicircular, *i.e.*, with a straight base, and equally developed on each side of the pedicel,



occasionally slightly lunate; towards the apex of the fronds and pinnæ subtrapeziform, and at the apex of both slightly tapered at the


base, scarcely cuneate; the outer margin is divided about one-fourth the depth into 3-4 rounded lobes, and there are 5-10 sori, according to the size of the pinnule, around the edge, each sorus being separated by a notch about as deep as itself, breaking up the edge into crenatures. The sori occupy the whole of the outer semicircular edge, and are seated on the crest of the crenature; they are kidney-shaped in outline, and are covered by membranous entire indusia. The sterile portions have an erose diaphanous margin.

There is thus, as already intimated, a close relationship to *A. chilense*, but the plant seems to differ from that by its larger size and freer growth, by the peculiar form of the pinnules, and by the less curved sori, the ends of which in *A. chilense* point outwards, like a pair of horns. There is also a peculiar undulation of the surface of the fronds. The caudex is slowly creeping, and makes its way to the sides of the pot in which it is grown.

The plant is a native of Peru, where it is found on the mountains, growing at an elevation of 12,000 feet. It has been recently imported by Mr. B. S. Williams, after whom it is named, and was awarded a First-class Certificate at South Kensington on May 2nd, 1877. —T. MOORE.

THE IRISH HEATH.

DABEOCIA POLIFOLIA.


URING the latter part of the summer, and throughout the autumn, the numerous blossoms of the Irish Heath, *Dabeocia polifolia*, also known as *Menziesia polifolia*, are very interesting and attractive. These plants are, indeed, almost always in blossom, or if the early-blooming shoots are pruned back, they break and blossom a second time. There are several forms of this pretty plant in cultivation, the most familiar of which are the purple-flowered type, and its pure white variety, *alba*, both of which are very effective. There is also a deeper purple variety, called *atropurpurea*, and one of more erect habit called *stricta*, all of which are worth a place in any collection of peat-earth hardy shrubs. They are well suited, along with the Hardy Heaths, for planting at the edges of beds of hardy Rhododendrons and Azaleas.

The most interesting of them all, however, is the variety *bicolor*, which is so remarkable a plant, that no garden of any pretension should lack a bed of it. Its peculiarity consists in its producing flowers of various colours

—purple, blush, and white—on the plant at one and the same time, indiscriminately, as it were, and so completely mingled as to have a peculiar and pleasing effect. Some plants, for the time being, have all their flowers wholly purple—a pretty, lively, rosy-purple. Some plants bear them almost wholly white; and many plants blossom with purple spikes and white spikes intermingled. One at first is led to suppose it is a mixture of plants, but an examination disproves this, as some are found with the spikes bearing both colours side by side, and occasionally both are displayed in the same individual flower. The *tout ensemble* is remarkably good, and the phenomenon is altogether a feature of special interest.—T. MOORE.

DWARF FRUIT-TREES.

PLANTING, ETC.

URING the last thirty years, much has been done to popularise the cultivation of hardy fruits. Though from time immemorial fruit-trees have been planted in gardens, their successful cultivation by the mass of people is still a rare circumstance; and yet there are few departments of gardening more within the reach of every one, or more likely to yield satisfactory results, when the right thing is done at the proper time.

Preparation of the Soil.—Apples, Pears, Plums, and Cherries will grow in any fairly productive soil, but they thrive best where the staple is a good, well-drained, friable loam. The average garden is often either too clayey or too sandy to do justice to the trees planted in it. How are fruit-trees to be grown to advantage in such positions? Special sites or “stations” must be provided, and they may be made in the following manner:—Having fixed on the spots where the trees are to be planted, mark out for each a space of not less than four feet every way. Dig out the soil to the depth of 30 inches. In the bottom of each hole place a layer, 9 inches deep, of brick-ends, large stones, clinkers from furnaces, or any other available materials. Cover this substratum with a thin layer of coarse ashes. On this put 6 inches of the best soil obtainable; the more turfy matter it contains the better. Stations thus prepared will cost a little in labour and materials, but the after-results will repay the outlay. If the soil thrown out of the holes be such as will grow really good vegetables, nothing need be added to it. Should it, however, be poor, light, and sandy, requiring the adding of much manure to produce good crops, then it will be necessary to mix with it one-third its bulk of marl, or failing that, of good turfy soil. In stiff clay land, a sufficient quantity of road-scrappings or lime-rubbish must be added,

to render the bulk fairly porous and less adhesive. In no case should fresh, raw manure be placed in the ground just before planting is done; but well-rotted dung may be added in naturally poor soils. Where really good turfy soil is obtainable in sufficient quantity, it will render the admixture of manure unnecessary. This preparatory work should be done a month or so before planting-time, and the soil thrown out of the holes left rough, to sweeten by exposure to atmospheric influences.


Selection of Trees.—For small gardens, bushes and pyramids will be most generally useful, because they will be easiest to manage. Trees which have been transplanted once or twice in the nursery should be selected, because they will be found shorter-jointed and furnished with more fibrous roots, and be better fitted for removal. A tree which has been transplanted a time or two may be said to have commenced its education; its fruit-growing powers have been gently developed, as will be perceived on examination, for it will be found that it has more or less fruit-spurs in various stages of growth. Cleanly-grafted trees on suitable stocks, thus directed on the road to fruitfulness, will only need moderate care and judicious treatment to ensure a yield of fruits after their several kinds.

When to Plant.—October and November are the best months to remove trees from the nursery. It may also be done in February, but preference should be given to the autumn.

How to Plant.—On receiving trees from a nursery, they should be planted as soon as possible. Where stations have been prepared beforehand, as advised, the planting may be done most expeditiously. First examine the roots, and cut away any bruised parts. Shorten any straggling roots by a slanting cut on the under side. Preserve all the fibrous roots, as on these the fruit-growing powers of the trees will depend. Place each tree in one of the prepared holes, taking care to keep the collar of the plant—the collar is that part of the tree where the main stem proceeds upwards from the crown of the roots—slightly above the ground level; *this is important, and should be carefully attended to.* Then spread the roots, in a horizontal position, so that they radiate from the stem in all directions like the spokes of a wheel. Next throw lightly over them some really good turfy soil, taking care that no spaces are left unfilled. Add more soil until the hole is filled, keeping the poorest, if good soil is scarce, for the top. When the operation is completed the tree should appear to be planted on a slight mound, the soil gradually sloping from the collar of the tree to the level of the surrounding soil. The next operation is to make each tree firmly fixed, so that violent winds may not move it. This may be done in a variety of ways: short


stakes may be driven into the ground at a distance from the stem, with an inclination *from* the tree of 45 degrees. To these tarred ropes may be fastened, and carried up to and around the stem at a sufficient height to secure steadiness—say three stakes to each tree. For small trees, a single stake may be placed parallel to the tree which is to be fastened to it; or for larger trees, three stakes, placed triangularly and secured to the stem, a twist of hay-band being wrapped round the stem, to prevent the stakes rubbing the bark. In one way or other every tree must be made firm, or its progress and growth will be seriously retarded. Finally, some half-rotted manure, to the depth of 2 in., should be placed on the mounds, to prevent undue evaporation, keep in the heat, and encourage the formation of surface roots. This mulch will act most beneficially during the ensuing spring and summer. If the trees have travelled a long distance, it will be well to give a good soaking of soft water after the mulch has been placed over the roots.—(*Abridged from J. C. Wheeler and Son's Catalogue of Fruit-trees.*)

SCALE, ETC., ON PEACH TREES.

HE late Mr. Thomas Rivers' recipe for scale is not only effectual and cheap, but is easy of application. Methyated spirits, applied with a camel-hair brush, is immediate death to them. I have had none this year, but last year several trees were afflicted by them.

For mildew and red-spider, I mix naphtha with the water, and syringe with it. My trees under glass last year (Peach trees) were sadly afflicted with the two. This year I have no red-spider, and very slight attacks of mildew. Last winter, I had the trees sponged with the above.—W. F. RADCLYFFE, *Okeford Fitzpaine.*

FLOWER-GARDEN PHLOXES.

HE Phlox is more frequently grown in beds than in pots, and to obtain the best results the soil must be deeply trenched and richly manured. The Phlox is a gross feeder, and speedily exhausts soil that has only been dug and manured in the ordinary way. I place two good layers of manure under the plants, one 6 inches below the surface, and another 9 inches deeper, and the ground is stirred up 6 inches deeper than the under layer. The best plants for a bed are those that have been propagated and grown in pots for one year. I plant four rows in a bed, and allow 20 inches between each plant, and they will do all the better if a little fine rich soil, such as is used for potting, is placed round


each plant. As the stem increases in growth it must be fastened to the sticks, which ought to be a little stouter than those used for the pot plants. Even with the rich soil and deep cultivation, the plants will suffer when the dry weather sets in. It will be necessary to place enough manure on the beds to cover the surface, and in dry, hot weather a good supply of water should be applied through the coarse rose of a large water-pot three times a week. The manure arrests evaporation from the soil, and its fertilising properties are washed down to the roots of the plants.

They may be either planted out in the autumn or in the spring; either way, there will be a good bloom the first year.


They will do in the same place for another season, but the number of shoots produced will be greatly in excess of what is required; the superfluous growths, which ought to be removed early, make excellent cuttings. The largest number that should be allowed to flower on each plant is five. In ordinary seasons, the cuttings will be ready from out-of-door plants about the middle or end of March, and if it is not intended to use small pots for the cuttings they may be inserted in a bed of fine soil, about 3 inches apart, out-of-doors. When rooted, replant into store-beds, about 6 in. apart. These plants may be transferred to their blooming-beds in the autumn or spring, and be treated in the same way as has already been recommended for beds planted with pot plants.

To keep up a supply of the best flowering plants, it is necessary to propagate a fresh lot annually. I never allow the plants to remain more than two years in a bed, as after the second year, the quality of the bloom deteriorates, and it is better to dig the plants up and throw them on the rubbish-heap. Some cultivators chop the large plants up with a spade, and forthwith proceed to plant fresh beds with the fragments. This system need only be noticed to condemn it. Such treatment is simply barbarous, and those who pursue it do not deserve success.—J. DOUGLAS, *Iford*.

THE DUNMORE PEAR.

 THE season for planting being at hand, I wish to recommend the Dunmore Pear to intending planters as highly deserving of notice, both for its excellence, and also on account of its coming into use between the seasons of Williams's Bon Chretien and Marie Louise. It was raised by Mr. Knight. The tree is very hardy, a vigorous grower, and bears most abundantly as a standard. It is, moreover, well adapted for cold or late situations. A standard tree here very rarely fails having a good crop. It is one of the best and most melting Pears in its season, and is deserving a place in a collection of choice Pears.—M. SAUL, *Stourton Park, Knaresborough*.

WINTER LETTUCES.

 ARDY Lettuces are much appreciated by cultivators, especially by those who, having neither cloches nor frames, wish to have, during the spring, a supply of this wholesome vegetable to eat, either cooked or in salads. The time of sowing the seed varies according to the climate and the soil; August 25th is generally the time preferred. These, if planted out in October and November, survive the winter, and yield, in April and May, good plants which head readily.

Those who desire the earliest supply cultivate, under cloches or in frames, such kinds as the Gotte, the Georges, or the Cordon rouge, which produce from December until March; the supply from this source is, however, necessarily limited.

Having to provide a quantity of Lettuces so that the supply is unbroken, I continue sowing as late in the autumn as possible, and very often the last of the lettuces Grise or Cordon, are damaged by frost. I have, therefore, changed these kinds for the variety Brune d'Hiver, of which I make a sowing at the end of July or the 1st of August at the latest. The culture does not differ from that at other seasons, only I plant it in September, on old beds or along the borders, which have the best aspect. These Lettuces have time to develop themselves before the severe frosts; they can endure some degrees of cold without suffering, and yield a supply from December onwards, without the aid of frames or bell-glasses. This last winter, notwithstanding the cold which we had in November, aided by the subsequent exceptional temperature, I continued to have Lettuces headed in the open air, and to-day (January 10th) my Lettuce-beds are as fine as at the end of May.

Success is not, perhaps, so certain every year, for the Lettuces Passion and Brune d'Hiver, although hardy, being then but young, would not endure a very low temperature, especially if accompanied by snow. My aim is not so much to make the plants pass the winter, as to enjoy this vegetable the longer without having recourse to forced culture, and I have been able to preserve my Lettuces until February, by covering them with a frame. This is one of the most economical modes of culture, and one which may be attempted by everybody. Kitchen-gardeners would find it profitable, since they might thus usefully employ the borders which are empty at that time.—HENRI FRAYE, in *Bulletin Horticole*.



DIPLADENIA CARISSIMA.

[PLATE 502.]

FEW of the genera of stove climbers are more attractive in their season than the Dipladenias, and some very charming new kinds—two of which we have previously figured—have been obtained from seed within the last few years, so that the range of beauty in this family has been considerably extended. At the one end of the series stands *Dipladenia Brearleyana*, whose flowers opening of a palish rosy hue, change as they acquire maturity to a deep rich rosy-crimson, a change which is in striking contrast with that which takes place in flowers generally, inasmuch as they mostly become paler as they become older. At the other end of the series stands *Dipladenia carissima*, the subject of our plate, which is remarkable for the soft delicate blush-tint of its flowers.

One drawing was made in the establishment of Mr. W. Bull, of Chelsea, from whom we learn that the plant is of seedling origin, and that it was raised some few years ago. It is a

woody climber, like the ordinary forms of *Dipladenia* met with in cultivation, and bears oblong elliptic acuminate, very shortly-stalked leaves, in opposite pairs, and in their axils the racemes of lovely flowers, which are of large size, and of a soft blush-pink colour, with an open throat, marked opposite the centre of the oblique limb-segments by radiating lines of bright rose. The flowers are about 5 inches in diameter, of good form, with a wax-like texture and substance, the limb-segments overlapping each other so as to give a smooth and handsome outline to the individual blossoms.

From its distinct character and free habit, and its light, delicate, and pleasing colour, it will prove an excellent companion plant for the high-coloured *D. Brearleyana*, mentioned above, and like it will make a first-rate exhibition plant. One great advantage observable in *D. carissima* is that it has strong flower-stalks, which enable the flowers to stand out boldly, much more so than in any other of its congeners.—T. MOORE.

ROOT-LIFTING FRUIT-TREES AS A MEANS OF INDUCING FERTILITY.*

THIS is a subject deserving of much greater attention than has commonly been bestowed upon it by gardeners and others interested in fruit cultivation.

By carefully studying the natural root-ramblings of all kinds of trees, it will not be difficult to comprehend that in most classes of fruits, where the trees have been for some length of time planted and their roots have become well established in the ground, there must be a considerable portion which have penetrated too far from the surface, so as to be beyond the influence of solar heat. Although trees planted under such circumstances will continue to make growth freely, and even assume a healthy-looking character, the wood, at the completion of the season's growth, is generally soft and spongy, and the fruit-buds, if formed at all, are invariably weak and imperfect.

The injurious effects of over-deep root-action having so far been exposed, it may now be as well, before explaining the method of operation, to mention that the process of lifting

may be performed at almost any season, although the leafless and dormant one is most to be recommended, both as regards the convenience of setting about it in regard to labour, and the ground being out of cropping. Many years ago, while living in the South of England, I lifted two Althorp Crassane Pear-trees, which had been showing signs of their roots being too deep, and of having reached the chalk which formed the subsoil. The border being out of cropping, and not being particularly busy at the time, operations to raise their roots were commenced about the middle of July, by first covering the whole of the tree with mats, leaving the young growth of a foot to 18 in. in length untouched. The work of lifting and relaying the roots was done as speedily as possible by as many hands as could conveniently get at it, and copious waterings were immediately given to the relaid roots, as soon as the earth was levelled in, while the foliage was syringed all over three or four times every day for about a fortnight. The young root-lets were soon forced into action, and the covering of mats which had been on day and night

* Abstract of a paper read before the Scottish Horticultural Association, by Mr. Webster, Gordon Castle.

for about a fortnight was removed, and the summer shoots shortened. The object of these being left until this time was to assist in bringing forward a quicker root-action than would otherwise have been obtained. The work was so successfully accomplished that fruit-buds got well matured during the autumn, and a fair crop of fruit was gathered the following year.

Trees of unlimited size may be root-lifted by doing the work, as it were, by instalments—taking a fourth, a third, or one-half at a time. The largest, undertaken by myself, was a Jargonelle Pear, covering a wall 14 ft. in height by 73 ft. in length. The roots were prepared the previous spring by cutting a trench along one-half of the border on which the roots were intended to be raised. This work was afterwards performed during the winter, and the remaining portion was treated in a similar manner two years after. Large and vigorous as the tree was, scarcely any check was perceptible, through allowing the roots on one side to get well established before taking the other in hand. In root-lifting, it is well to have a quantity of fresh loam at hand, so that no delay may take place while the roots are exposed.

When the trees have been selected for operating upon, a trench should be cut out all round as near the extremities of the roots as may be considered safe, according to the age and size of the tree. In the case of those growing against walls, on borders which are in proportion to their height, it will generally be found sufficiently distant from the stem to open the trench close to the walk. When the soil has been taken out to the depth of $2\frac{1}{2}$ ft. all round, or to the subsoil if less, the surface within the radius should be taken off with the spade as deep as the roots will admit, and put aside by itself, for on account of its being enriched by frequent applications of manure it is well-suited, along with fresh loam, to put around the roots when relaid. The next process is to relieve the roots from the soil, by forking it gently all round the edges of the trench, taking special care to save all the small fibres. The soil at the bottom of the trench must be thrown out in order to keep it entirely clear of the roots. As the work progresses, and the numbers of roots as they are relieved become trouble-

some, a few strong pegs thrust into the soil will keep them aside, so as to allow the work to be performed with more freedom. Mats or straw will be found necessary to cover over the exposed roots at night, and if any of the soil is of inferior quality or considered exhausted, it should be put aside as the work goes on. In ordinary cases, where the trees are healthy, this will not be required.

As soon as the roots have been all laid bare, the soil must be again thrown out, and the bottom properly levelled. A good coating of fresh loam, in addition to about half of the surface previously put aside, should make up the border to about the proper level for relaying the roots, which, as a rule, should be so near to the surface as just to be clear of the spade. Wherever the roots are numerous, it is better not to spread them all out at once, but it should be done in two or more sections, covering each division with a layer of fresh soil before putting down the next. When the roots have all been relaid, and a covering of 2 to 3 inches of soil put on over them, a good coating of well-rotted manure spread over all before filling in the remainder of the soil and finishing off the border, will produce good effects by assisting to encourage the roots into growth, and likewise by inducing them to keep towards the surface.

The advice given above is no theoretical promulgation, but is given from information attained by long experience and extensive practice. Most of the different kinds of wall-fruit, with the exception of Cherries, which have few fibres, and are difficult to manage, have been root-raised under my superintendence in the gardens here. I have therefore much confidence in advocating the principle of root-raising; and I also feel convinced that, wherever the plan is adopted, the labour and expense connected therewith will be amply repaid.—J. WEBSTER, *Gordon Castle Gardens.*

ORCHARD-HOUSE MANAGEMENT.

SO little has to be added to my former remarks on Orchard-House Management, that I would not have asked for a corner of the FLORIST this autumn, had I not introduced a single flow-and-return hot-water pipe into mine, in the hope of still further extending the season of our best fruits. Presuming that the past season was exceptional, I fear I must pronounce the experiment to have been disappointing. Still, at the blooming season I

gained a great advantage by securing, through the well-known glow of the hot-water, a satisfactory "set," and by its continuance for a week or two enabling the embryo fruit to effect its first progress.

Here I should have stopped, for notwithstanding free circulation and every other attention, the deep, healthy green of early spring gradually gave way to a new tint, and the result was that, besides the anticipated deficiency in flavour from the cold, damp, and absence of solar power, the fruit would not "hold on," but with every hour of bright sunshine fell by dozens, and could not go to my friends without an apologetic note. The season has, perhaps, something to do with the failures, as the outdoor trees also give their produce too readily. Still, with the discontinuance of artificial heat, all the trees are making beautiful late growth, and giving promise of better things for 1880.

This one year's experience suggests the conclusion that artificial heat for orchard-houses should be made the medium of saving the early bloom from the trials of our capricious springs, and be not again resorted to till all the stone fruit is cleared off.

I have nothing to add as to general management, except to recommend a profuse watering of the whole soil of the house when the fruit has finished the stoning process, and is swelling for maturity. Three years' trial obliges me to report the late Mr. Rivers' extra early Peaches *Beatrice*, *Leopold*, *Alfred*, and *Louise*, as not compensating by their quality for their ten days' precocity. His (Rivers') *Early York* is worth all the family. All the Neectarines are desirable,—as earlies *Advancer* and *Napier*, as lates *Victoria*, *Albert Victor*, and *Pine-apple*. Rivers' *Lord Palmerston* would be a noble Peach, if we could ripen it.—G. D.

THE HEREFORDSHIRE POMONA.

THE second part of the admirable *Herefordshire Pomona* has been issued during the present autumn, and fully supports the high character which we mentioned as pertaining to the publication, when alluding to it last year. It does infinite credit to the good-taste and public spirit of the Woolhope Club, and deserves to receive the fullest possible public sympathy and support. At the outset Dr. Bull gives us a pleasant chapter on "Modern Apple-Lore," profound in its researches, and which must be read to be appreciated; also, an

excellent biographical sketch of Lord Seudamore, of Holme Laey, the latter article being illustrated by a well-engraved copy of a family portrait of his lordship, who was one of the earlier Herefordshire pomological worthies, and who seems to have been deservedly held in high esteem by his neighbours and friends. Sir H. E. C. Seudamore Stanhope, Bart., contributes an interesting description of the Cordon Pear-wall at Holme Laey, planted in 1861, which has been thoroughly successful, and is here cleverly portrayed. These articles form the introductory portion to the present issue.

The remainder of this Part 2 is occupied by coloured illustrations and descriptions of numerous varieties of Apples and Pears, in which we are glad to note that our suggestion to quote references to existing figures has been to some extent adopted. There are six plates of Apples, representing 32 varieties of that fruit; and two plates of Pears, representing eight varieties. Cider Apples, of course, come in for a considerable share of the illustrations, but not to the exclusion of other first-rate kinds, whether for kitchen or dessert use. The illustrations are produced by Severeys, of Brussels, and are done in his best style. The descriptions of the varieties figured are from the pen of Dr. Hogg, whose name is well known in this association.

We have said that the Woolhope Club deserves a full share of public support in producing this magnificent work, and we trust it may meet with its due in this respect, as there is an ample field unworked; and now that we have such abundant evidence that the leaders of the Club know how to occupy this ground so well, it is to be hoped, in the interest of that section of the public which is interested in fruits, that they may experience every encouragement to induce them to go forward in their, no doubt, congenial work.—T. MOORE.

HÆMANTHUS KALBREYERI.

THIS brilliant species is one of a group represented by *H. multiflorus*, to which the generic name of *Nerissa* was applied by Salisbury. The group, which forms a sub-genus of Baker, is characterised by having large thin leaves, comparatively narrow or fugitive bracts, loose globose umbels of very numerous flowers, and either horizontally spreading or reflexed segments of the perianth. *H. rupestris* and *H. cinnabarinus* are other species of the same group.

Hæmanthus Kalbreyeri was first described by Mr. Baker in the *Gardeners' Chronicle* (N.S. x., 202), from specimens sent to England by Mr. W. Kalbreyer—when collecting in West



HEMANTHUS KALBREYERI, inflorescence. 43

Africa, for Messrs. Veitch and Sons, of Chelsea —by whom it was found in the Isles de Los, growing in open spaces under trees. Mr. W. Bull has subsequently imported the same plant in considerable quantity. It has been exhibited on several occasions from the establishments of both these celebrated cultivators, winning certificates of merit both at the Royal Horticultural and Royal Botanic Societies, and both Messrs. Veitch and Mr. Bull have published illustrations in their *New Plant Catalogues*, that which we here introduce, having been obligingly lent to us by the Messrs. Veitch.

The plant produces a globose root-stock, or bulb, furnished with stout, fleshy fibres. The spotted flower-scape is robust and appears before the leaves; it grows from the side of the crown, whence the oblong leaves afterwards emerge, and is marked by copious spots of claret-red on a green ground, grows a foot or more in height

(two to three feet, according to the discoverer), and supports a large, round umbel, 8 in. in diameter, consisting of from fifty to a hundred bright vermilion-red flowers, the perianth of which has a cylindrical tube half-an-inch long, and six narrow, spreading linear segments, an inch long, surrounding the bright red erectopatent filaments, which are as long as the perianth segments, and each tipped by a deep yellow anther. The leaves are nearly a foot long, bright green on both sides, with a dotted base. Its closest botanical affinities are with *H. multiflorus* and *H. Mannii*. It is a brilliantly ornamental plant, flowering freely during the early summer months, its flowers being exceedingly effective, on account of their glowing colour, and the large globose heads in which they are produced; indeed, the plant again becomes very ornamental towards the autumn, as its flower-heads are succeeded

by heads of glossy scarlet fruits. It of course requires to be grown in a stove, and should be rested after its growth is perfected.—T. MOORE.



HEMANTHUS KALBREYERI, flower-stem and young leaves.

HARDY APPLES.

SOME five months ago, I wrote that I expected a full crop of apples, but alas! alas! now that the time has come for in-gathering, I am sorry to say that there is not more than half a crop, and in many places not nearly so much as that. The fruit, moreover, is small and badly developed, all, no doubt, owing to the continued absence of sunshine throughout the season.

About a month ago I saw in a nursery in the neighbourhood of London a very fine collection of apples, all dwarfs, grafted on the Paradise stock, the trees about 4 ft. high, grown pyramid fashion, and quite laden with fruit of the very finest quality. Seeing that the present has

been such an ungenial season, it has occurred to me that it would be useful were I to give the names of the varieties I saw producing such fine fruit, thus evidently showing their hardiness. The list may be a guide to intending planters. The sorts are forty-eight in number, and will supply the table for eight or nine months in the year:—

Barton's Incomparable.	Winter Hawthornden.
Eeklinville.	Rymer.
Frogmore Prolific.	Stirling Castle.
Peasgood's Nonsuch.	Eldon Pippin.
Red Astrachan.	Flower of Herts.
Grand Duke Constantine.	Aitken's Seedling.
Transparent Reinette.	Coole's Seedling.
Mère de Ménage.	Annie Elizabeth.
Fearn's Pippin.	Keswick Codlin.
Lord Suffield.	Nelson's Codlin.
Dumelow's Seedling.	Cellini.
Manks Codlin.	Court-Pendu-Plat.
Old English Codlin.	Kerry Pippin.
Gloria Mundi.	Northern Greening.
Braddiek's Nonpareil.	Oslin.
New Rock Pippin.	Adams's Pearmain.
North-End Pippin.	Cox's Orange Pippin.
Early Nonpareil.	Worcester Pippin.
Martin's Nonpareil.	Blenheim Pippin.
Scarlet Permain.	Hawthornden.
Reinette Grise d'Automne	Lord Derby.
Jolly Beggar.	King of the Pippins.
Norfolk Bearer.	Golden Knob.
Sturmer Pippin.	Burr Knott.

I may further mention that trees of this character can be bought with plenty of blossom-buds on them.—J. RUST, *Eridge Castle, Tunbridge Wells.*

VILLA GARDENING.

November.

THE autumn has come. On the whole, October was an enjoyable month; there were many bright and drying days; but about the middle of the month frost severely nipped the tender things, such as *Dahlias*, *Balsams*, *Tropæolums*, and *Marigolds*. The leaves are falling also, and green hues have changed to those of russet and brown. The winter season is at hand, and now is the time to prepare for it, and take every precaution against it when it comes.

Greenhouse.—At this time of the year, when many things have to be got under glass and housed for the winter, there is great danger of over-crowding, and the consequence is that many things suffer from damp and other causes. It would be a wise proceeding to destroy surplus stock, rather than to do injury to a whole collection by cramming too many plants into a limited space. There is great need for giving air on all suitable occasions, but care must be taken that the house is not left open at night, and surprised by frost. Water should be with-

held as much as possible, in order to induce a state of rest in the plants, as in this state they are better able to resist frost when in an unheated house. On the other hand, the plants must not be allowed to become what is termed "dust-dry," for that is a state likely to injure the tender roots, on which the plants have to depend for sustenance. As November is usually characterised by close, humid weather, the plants should be gone through occasionally, and decaying leaves picked off. Damp hangs about these leaves, and soon spreads to other parts of the plants, if not removed. *Zonal Pelargoniums*, *Fuchsias*, *Balsams*, *Begonias*, &c., are still flowering, but the dull, dark days will soon commence to efface their floral beauty. *Chrysanthemums* are now the leading feature of the greenhouse. Those that have been housed for a few weeks will be making rapid progress, and should be kept staked and neatly tied-out, so that the air can freely circulate among the branches. A little liquid manure, if it can be had, or failing that, some of Clay's Fertiliser, given twice or thrice a week, will greatly help the plants, giving a healthy hue to the foliage and fineness to the flowers. Cuttings of *Pelargoniums*, *Lobelias*, *Fuchsias*, *Verbenas*, *Tropæolums*, &c., in store-pits will need constant looking over, clearing away all evidences of damp, and taking care not to over-water them, to run the risk of their damping off.

Cold Frames.—As in the case of the greenhouse, so here, the frames will be pretty well occupied, as many things that have stood out-of-doors will be all the better for shelter. It is of the first importance to have a dry bottom to cold frames during winter. A good layer of brick-rubbish, broken crockery-ware, &c., to the depth of four or six inches affords excellent drainage, and on this should be placed the roughest refuse from the cinder-heap, and then a surface of the finest. On such a bed, plants can be kept fairly dry and comfortable during the winter, though the frame may be on a north border, in a shaded spot. As many of the plants are going to rest, the occupants need to be watered with discrimination. When there is a fine, warm rain falling, the lights should be raised or pulled off, as the plants will be benefited, if exposed for a few hours. In fine weather, unless the winds are cold, and when there is a little warm sunshine, the lights can be thrown open, that the plants may get the benefit of it. Such things as *Auriculas*, *Primroses*, *Polyanthus*, &c., will have the leaves formed in the summer beginning to decay, and needing to be carefully picked off; this also should be done in the case of all plants going to rest and shedding their leaves. *Crocus speciosus* and the *Colchicums* are now very pretty in pots, and *Anemone fulgens*, *Triteleia uniflora*, and some others are coming on to succeed them.

Seedling plants of *Polyanthus*, *Primroses*, *Alpine Auriculas*, and things of this character, raised from seeds sown in July, should be pricked off from the seed-pots or pans, and encouraged to grow on in size, which they will do, if put into fine, rich soil. A few more *Spring Bulbs* should be planted, to keep up a succession.

Flower Garden.—Frost, rain, and long dark cold nights are telling upon the occupants of the flower-beds, and though these will be in bloom for some time longer, it will be patchy and irregular. Anything of a tender nature it is desirable to save should be lifted and housed at once. A few dwarf, bushy *Evergreen Shrubs*, such as *Laurestinus*, *Aucuba*, *Portugal Laurel*, *Bays*, *Hollies*, *Rhododendrons*, *Euonymus*, *Coniferous plants*, &c., come in very useful at this season of the year for furnishing the beds during winter; but these can be employed only on condition there is a spare piece of ground, in which they can be planted-out during summer. Now is the time to lift and divide such useful spring-flowering hardy perennials, as *Pansies*, *Violas*, *Aubrietias*, *Arabis*, *Evergreen Candytufts*, *Rockets*, *Double Daisies*, *Primroses*, *Polyanthus*, &c., for spring display. They divide well now, and soon make roots, if put into good stuff. Many Villa gardeners are fond of budding *Roses* in the summer, and a supply of stocks for budding should be got during winter, and planted in some good loam. Those who plant-out *Hyacinths*, *Tulips*, *Crocuses*, *Narcissi*, &c., in beds for spring display, should do so at once, choosing a fine day and drying weather for the purpose.


Kitchen Garden.—Whatever digging and trenching is required, now is the time to do it. Many pieces of spare ground are covered with a dense growth of weeds, for the simple reason that it has been impossible to keep them down. It will be well to bastard-trench these, throwing the weeds into the bottom of the trench. One great advantage in digging and trenching the ground early is that every additional day's exposure of the soil to the action of the weather does it good. Generally speaking, it is not well to manure in autumn, because the rains wash the best of it away. Beds of *Spinach*, *Spring Onions*, *Lettuce*, &c., should be freed from weeds, and as far as it can be done the surface soil should be kept stirred with the hoe or by hand. Beds of *Spring Cabbage* will be benefited by putting the hoe amongst them; indeed, all beds of green-stuff need to be so treated. Need we say the Kitchen Garden should be kept as clean and tidy in winter as at any time of the year?

Fruit Garden.—Late *Apples* and *Pears* are hanging much longer than usual, but all should be gathered and stored away at once. *Bush fruits* can be pruned, and the ground forked over between the rows; the prunings should

be burnt, and the ashes used for surface-dressing. In pruning *Red* and *White Currants* the trees should be cut back to skeletons, the chief of the fruit-buds being at the junctions of the new wood with that of last year, and leaving only two or three joints beyond that point; also cutting clear away to the base every branch that is ill-placed, or that chokes up the centre. *Black Currants* do not like the knife, so it is best to trim the branches to regular distances, and shorten the longest back to good joints, preserving plenty of young wood, leaving the plumpest branches nearly their full length, and cutting all weak ones clean away.

—SUBURBANUS.

GARDEN GOSSIP.

URING the past autumn there was an interesting exhibition of specimens of the PHYLLOXERA VASTATRIX, at the Agricultural Hall, Islington. The insect was shown under the microscope in the different stages of its growth by Mr. Richard Blandy. Mr. Leacock, the owner of a vineyard in Madeira whence the specimens were brought, has, with a magnifying-glass, while lying on the ground in early summer, watched the fully-developed insects coming to the surface through cracks in the earth. When above-ground they spread their wings, and seem to be blown away rather than to fly. In a pamphlet which was distributed to visitors, it is stated that, in Madeira, Mr. Leacock has succeeded in checking the general destruction of the vines on his estate. His mode of dealing with phylloxera is to lay bare the underground stem and principal roots of the vines as far as this may be done safely. The loose bark, on which the insects are generally thickly clustered, is burnt, or put into boiling water. The lower part of the stem and the roots are then coated with a preparation of turpentine and resin, about 3½ oz. of finely-powdered resin being added to each quart of turpentine. When gently heated, the mixture becomes thick enough to form a cohesive coating to the roots. This stuff destroys the insects touched by it, and those lower down, prevented from working upward, die off as their food fails by the destruction of the roots below them. The turpentine mixture is applied in the autumn and winter, and the plants are at the same time well manured. There may not be any marked improvement in the first year after this treatment, but the next year the new roots will have been thrown out, and the plants will not require to be treated in this way again for four or five years. Dr. Grabham, F.R.C.P., in a letter to the *Times*, writes:—"I myself have witnessed the very marvellous resuscitation of failing vines under his [Mr. Leacock's] treatment."

—OF the TEA ROSE MARIE VAN HOUTTE Mr. Baker writes in the *Garden*:—"If only allowed to grow one Tea Rose, I should unhesitatingly choose this one. Anything more lovely than the delicate rose-tinting of the outer edge of the petals I cannot conceive; it seems to me as if it were blushing at the perfection of its own loveliness. This rose was sent out by Ducher in 1871. Its habit is very good. I have several plants of it on the seedling brier, which have grown to the top of a wall 10 ft. high, and on them may frequently be seen forty or fifty good blooms open at the same

time. It is one of the earliest spring roses, as well as one of the latest autumnal bloomers, and I have on more than one occasion cut a bloom of it from a south wall on Christmas Day."

—THE CHINESE RASPBERRY (*Rubus crataegifolius*) is referred to by Prof. C. S. Sargent, in the *American Agriculturist*, as a new fruit which may be useful for hybridising. It is a native of Manchuria, Northern China and Japan, and therefore very hardy. He had cultivated it as a Blackberry, of little horticultural importance or value, except as an ornamental plant of neat habit, remarkable for its rich autumnal colouring. This year, however, the plant has fruited, and it proves to be a true Raspberry. The fruit is large, firm, clustered, nearly semi-spherical, of a brilliant orange-scarlet colour, and with a flavour which suggests the common black Raspberry or Thimbleberry. The largest fruit Mr. Sargent has noticed was $\frac{3}{8}$ -inch in diameter, and rather longer than broad. Probably, as a table fruit, the Chinese Raspberry may be hardly worth cultivating, but it is suggested that by using it to cross with some of the delicate garden varieties a hybrid might be obtained hardier than anything now in cultivation. Such a hybrid might be expected to produce large and very high-coloured, handsome fruit, of great substance, and therefore valuable for market purposes. The neat habit, great hardiness, large, brilliant fruit, and especially the rich claret-colour which its foliage assumes in autumn, render the Chinese Raspberry one of the most desirable of the many shrubs recently introduced from its native countries.

—ON the best SEASONS FOR TRANSPLANTING Trees and Shrubs, Mr. Burrows writes as follows in the *Journal of Forestry*:—"To the planter who carefully studies his subjects, and works with judgment and expedition, nearly every season of the year affords opportunities for planting and transplanting. From late in July up to the end of August, I have seen Cedar, Spruce, Scotch Pine, Silver Fir, and Weymouth Pine planted out with success; and from that time till the middle of October, both large and small evergreens. Then come the smaller deciduous trees, which are followed by the nursery transplanting of all kinds up to the middle or end of May. Large deciduous trees also may be removed, after proper preparation, at almost any season, except for about six weeks or two months at the height of their growth."

—IN the second edition of his NOTES ON LILIES, Dr. Wallace has expanded his original pamphlet into a book, which will be exceedingly useful to all Lily growers. A vast amount of information has been brought together, some from unpublished letters, some from communications to the garden periodicals, and some from the writer's personal experience, and this the reader interested in Lily-culture may usefully consult. The descriptive portion is based on Mr. Baker's papers on this subject, which is supplemented by notes and observations from other sources. Altogether, Dr. Wallace has given us a handy *résumé* of the whole subject which will render his Notes welcome on the shelves of the garden library. The book is profusely illustrated, and is sold by the New Plant and Bulb Company.

—THE very pretty and graceful POLYGONUM AMPLEXICAULE is one of the most conspicuous of autumn-flowering herbaceous plants, in con-

sequence of the profusion of its crimson flower-spikes. In suitable situations, such as the margins of lakes, &c., it grows from three to four feet in height; in drier but somewhat shaded spots about half that size. We recently saw it in great beauty on the borders of the lake and in other situations at Pendell Court, Bletchingley. The variety *oxyphyllum* is of the same habit, but the blossoms are white. Both plants are most desirable perennials, and worthy a place in the most select collections.

— **CONSIDERABLE** advance has been made amongst the **IVY-LEAVED PELARGONIUMS**. We saw the other day, at Swanley, a new variety named *Mrs. Cannell*, which bears an immense truss of large-sized flowers of a deep mauve-purple, quite novel as to colour and general character, but a true Ivy-leaved variety, and one which will create a sensation amongst raisers when distributed. The hybrid Ivy-leaved variety *Diadem*, which has rosy-pink flowers, and *St. George*, in which they are of a salmony-scarlet, are both decided acquisitions.

— **THE** last new Australian Palm, *ARECA ALICÆ*, has been dedicated by Baron Mueller, in the *Gartenflora*, to the memory of the late Princess Alice, Grand Duchess of Hesse. It was discovered by the indefatigable Mr. Walter Hill in north-east Australia, about 10 miles north of Trinity Bay, and transferred by him to the Brisbane Botanic Garden, where it has flowered and fruited. This new Palm will prove a welcome addition to our limited number of species suitable for small houses, inasmuch as it grows only about 10 ft. high, and throws up several stems from the same root. The pinnately divided leaves are about 4 ft. long, and the slender stems 1 in. to 2 in. thick. *Areca Alicæ* is allied to *A. oxycarpa*, a native of the Celebes, and *A. triandra*, of the Malay peninsula, Java, and neighbouring islands. We are not aware that this Palm has yet been introduced into European gardens; but if it has not, it doubtless soon will be, now that it has fruited under cultivation.

— **FOR** the **TRIPOLI** SECTION of **ONIONS**, Mr. G. T. Miles recommends the selection of the best portions of the garden, where the soil has been well enriched and deeply trenched. The early batch should be sown at the beginning of August, in drills, a foot apart, the Queen being an excellent kind for this purpose, and one which should be grown in every garden, as being the earliest and best in cultivation. The White Naples forms a good kind for the next sowing, which should be made about ten days later. The Giant White Tripoli, if it can be obtained true, is the largest and a still later variety, and this will come in properly, if sown at the same time as the White Naples.

— **SAMPLES** of **WATERPROOF TREE AND PLANT LABELS** have been sent us by Messrs. Fisher, Clark, and Co., of Boston. They are neat and strong, and pencil-writing remains unaffected when they are soaked in water. A good cheap label is a very useful article to nurserymen and others who have to send out plants under names, and these will be found to quite answer this description.

— **IN** a letter on the **POTATO CROP** published in the *Standard*, the variety called **SUTTON'S MAGNUM BONUM** is strongly recommended as a disease-resisting variety. The writer ("Naturalis") believes that our only remedy against disease is to return to natural propagation,

by crossing the best and strongest-growing varieties. This system has brought us, he says, at least one magnificent potato, Sutton's Magnum Bonum, which he has grown five years, and which has this year again come out untouched by disease, a result which he attributes to its vigorous constitution, and hard woody stems. Mr. Shirley Hibberd adds that the variety referred to, raised by a gardener, is the most valuable ever brought into cultivation, for in this disastrous season it has escaped the blight entirely, and is notable for its fine quality and high productiveness. At Straffan House, Kildare, the gardener, Mr. Bedford, finds this the most prolific variety he has grown, the flavour good, and the crop freer than any other from disease.

Obituary.

— **THE** REV. GEORGE KEMP, Rector of St. Alphage, London Wall, E.C., a Fellow of the Royal Horticultural Society, and for several years a much esteemed Vice-President of its Fruit Committee, died suddenly at Edinburgh, on August 2nd.

— **MR.** PETER S. ROBERTSON, senior partner of the firm of P. S. Robertson and Co., nurserymen and seedsmen, Edinburgh, died suddenly on September 16th. Mr. Robertson was born at Comrie, in Perthshire, on November 4th, 1818, and served his apprenticeship as a gardener at Buchanan Castle, Drymen. He came to the Edinburgh Botanic Gardens in 1837, and leaving there, in 1843, was for the next sixteen years with Messrs. Peter Lawson and Son, before he commenced business on his own account. He was a kind and firm friend, and a most upright man.

— **MR.** JOHN CAIE, for many years gardener at Inverary Castle, died on September 22nd. He commenced his gardening career in the Glasgow Botanic Garden, then under the management of Mr. Stewart Murray, and in 1835 he initiated, or was one of the first to carry out, the bedding system, at the Dowager Duchess of Bedford's garden, Bedford Lodge, Campden Hill. In 1856 he removed to Inverary, in the service of the Duke of Argyll. "Mr. Caie," writes an old friend, "was one of the most original of thinkers and cleverest of gardeners." He was one of the originators of the West London Gardeners' Association for Mutual Instruction, a society which did great good in its day.

— **PROFESSOR** FENZL died on September 29th. For many years this eminent and amiable botanist held the post of Professor of Botany in the University of Vienna, sometime in conjunction with the late Professor Unger, and he was also Director of the University Botanic Garden in the same city.

— **JOHN** MIERS, Esq., F.R.S., died at his residence, Addison Road, Kensington, on October 17th, in his 91st year. Mr. Miers was a botanist of high repute, and, through his travels in South America, especially familiar with the plants of Chili and Brazil, on which he has published many learned dissertations, especially in the *Linnean Society's Transactions*. He was a most kind-hearted and estimable man, and his labours were justly appreciated by the Emperor of Brazil, by whom he was created a Commander of the Order of the Rose,—fitting honour for a botanist.



W. H. Fitch, del

Chromo Strootant G. & C.

Pelargonium (ivy-leaved) St. George.

HYBRID IVY-LEAVED PELARGONIUM ST. GEORGE.

[PLATE 503.]



OUR gardens owe the very beautiful variety of Hybrid Ivy-leaved Pelargonium we now figure to Mr. J. George, of Putney Heath, who is also well known as a raiser of choice novelties of other races of the Pelargonium family. It is, we learn, the result of a cross between *P. peltatum elegans* and a zonal variety, and, as our figure shows, is a most attractive plant, being of free habit, and producing abundantly its ample trusses of bright salmon-red flowers. Mr. George states that he has for some years been engaged in attempting to improve the Ivy-leaved Pelargoniums by crossing them with the zonals. In this attempt he has made the ivy-leaved sorts the seed-bearers, his object being to retain their very distinct habit and to combine therewith the larger trusses and more brilliant colours of the zonals; but he has found the process a slow one, inasmuch as the plants of hybrid race will not perfect their seeds.

We owe to the raiser the annexed particulars of his experience, in regard to their place in our

gardens:—"The Hybrid Ivy-leaved Pelargoniums are a most useful class of plants, deserving of far more attention than they have at present received. They are all of a trailing habit, but some are much stronger growers than others. Thus the varieties called *Nemesis*, *Gem*, and *Argus* are best adapted for vases or basket-work; while *St. George*, *Mrs. J. George*, *Diadem*, and *Progress*, being stronger growers, are best suited for pillar or trellis-work. They will all be found useful to supply cut-flowers for small glasses, as they mix with other choice flowers much better than the zonals. Moreover, there is no difficulty in having them in blossom for ten months in the year in a cool greenhouse. They are in every way superior to the true Ivy-leaved types, the colours being so much brighter and more varied, and the trusses very much finer and bolder; I have had as many as sixteen flowers open on a truss at one time." Of the distinctness, beauty, and utility of these novel sorts, there can be no question whatever.—T. MOORE.

THE CULTURE OF WALL-FRUIT.

No. XIX.—THE APRICOT (*concluded*).

HERE is but little to add with regard to the manipulation and training of Apricots. The principal points to be kept in mind and attended to are, first, to make sure of a perfect system of drainage; next, to give an abundant supply of soft water during the growing season; further, to carefully remove all foreright and other ill-placed shoots designed for the formation of spurs, during the summer, so that the sap they would absorb for their support may be diverted to the perfecting of the wood which remains as a permanent part of the tree—that is to say, the young shoots which are to be laid in for fruit-bearing the following season, and also for furnishing young wood to keep the balance even between the growth for fruit and the growth for young wood for other years.

These objects should always be borne in mind in the summer management. It is a mistake to concentrate all the training on the production of fruitful wood, because by that system the energies of the tree become exhausted, and the growth debilitated, thereby con-

tributing towards early decay. Although, as a general rule, therefore, the strong and luxuriant shoots are looked upon as intruders, and are, in most cases, very properly removed, yet we may feel sure that they are a natural provision put forth by the trees for the production of a strong and vigorous, non-fruitful growth, by way of counteracting the exhaustive effects of fruit-bearing. These luxuriant shoots are easily and early to be distinguished; and in the course of stopping, spurring, and disbudding, a general survey of the tree will indicate those parts in which such shoots will be required for filling up vacancies, either actual or probable, so that they may either be laid in at full length or be shortened back to a lateral, as the case may require. Shoots of this kind will occasionally keep growing without throwing out any laterals, and often become fine-looking fruitful shoots, full of bloom-buds; where the choice is afforded, such shoots are the most eligible for training-in, on account of their fruitful tendency, for although in the absence of any weakening effects—such as those

produced by lifting and root-pruning—they will invariably throw off any fruit which may set upon them, yet they will be found to be the best stamp of wood for keeping the trees supplied with a healthy and fruitful growth.

If, in regulating the amount of fruit which is taken from a tree, we ought to be guided by its strength and luxuriance as to its capability of bringing it forward of good quality, so must we also take all these same points into consideration when we are called upon to determine the amount of strong growth which should be laid in. It is as necessary, in training, to avoid over-crowding with wood, as it is to avoid over-cropping with fruit, yet at the same time, a margin should always be left in each case,—in fruit, for the dropping of those which fail to stone, and in the shoots to secure sufficient to keep the trees well furnished, and to give the operator a choice of wood when the growth is regulated at the winter pruning.


There are cases in which it may become desirable to attempt the renovation of old and favourite trees, which have become exhausted and enervated by fruit-bearing for many years, in which case the operator will have to look closely on both sides of the question; and in deciding, he must be guided by the amount of innate vitality in the tree as it stands. If there is a good supply of shoots, which indicate vigour, springing from the centre low down, and near to the general starting-point, it may be worth while to head back the tree to such growth and make a fresh start. In that case, it will be advisable to cut the branches off clean to the growing shoots when the tree is quite dormant, and as a further precaution to paint over the cut; and then to remove all the surface soil of the border down to the roots, and supply its place with a rich and generous compost, for it is in these later stages of growth that stimulating manurial substances become a legitimate application calculated to reinvigorate the strength of the tree, and produce a fruitful growth for some years.

But if, on the contrary, the operator has before him a tree with the best growth at the extremity of the branches, and the centre, near the starting-point, consisting of old and gnarled wood devoid of young shoots, by far the best policy is to root it out altogether, and then to trench up the ground 3 ft. deep, looking well

to the drainage, to take the worst soil away, and replace it with virgin compost, and to replant with young, selected trees.

Apricots are liable to much the same diseases as the Peach and Nectarine. As regards aphides, mildew, and red-spider, the same remedies are available, although they suffer in a lesser degree, owing to the superior hardness of the wood and the coriaceous nature of the foliage. At the same time, prevention is better than cure, and I remain quite of opinion that the painting of the walls and wood-work, as before recommended, will go very far towards reducing the attacks of these pests to a minimum, and also contribute very largely towards the destruction of that formidable pest, the leaf-roller.—JOHN COX, *Redleaf*.

BOMAREA CARDERI.

MONGST the finest of our greenhouse climbers must be reckoned the species of *Bomarea*, of which one new and very beautiful example is fairly represented in the annexed woodcut, from Mr. Bull's *Catalogue*. We say fairly represented, because the figure is really as complete as the size of the page permits; but that it does not do justice to the plant will be apparent, when we state the following particulars of a specimen we recently saw growing at Pendell Court, Bletchingly, the seat of Sir George Macleay, Bart., where, under the fostering care of Mr. C. Green, a gardener well known for his botanical proclivities, the stems had grown to a length of 12 ft., with a diameter of three-eighths of an inch. This plant, which is planted out in a kind of corridor, the roof only of which is glazed, has produced three of its cymose umbels of flowers, on which some 30 seed-pods have perfected, while its full-sized mature leaves measure over eight inches long, by about five inches broad. The branches of the inflorescence (compressed, in our figure, owing to the exigencies of space) naturally spread out, and in the case in question measured 2 ft. across the points where the latest flowers were expanded. The largest of the cymes produced about 40 flowers, on eleven branches, which respectively bore from three to four flowers, several of them having produced four each. The plant continued in bloom, as we learn from Mr. Green, for more than two months.

To these notes descriptive of the plant as growing at Pendell Court, we have the pleasure to add some cultural remarks by Mr. Green :—

Bomarea Carderi is undoubtedly the finest

appearance, when allowed to twine up a pillar, where it can have access to free air, sun, and light, which give proper colour to both flowers and foliage.



BOMAREA CARDERI, reduced (see p. 178).

species of this beautiful and interesting genus yet known to us. To be seen in perfection, it should be planted in a cool greenhouse, which is just kept free from frost. It has a charming

The plant is now growing here most vigorously in a well-prepared border, consisting of good turfy loam, leaf-mould, and pulverised mud from the lake ; the border is about 3 ft.

deep, with a thorough drainage of broken bricks, &c. I find it delights in abundance of water, with liquid manure once a week, but care has to be taken that the soil is kept perfectly porous. I believe this to be the main point in insuring vigorous growth and good flower-heads. The plant here has at the present time three flower-heads, each having borne over forty flowers, on growths 12 ft. high. This species may probably be hardier than I have as yet ascertained, but grown as I have already treated it, it is a grand plant, and is, moreover, evergreen.

There are several other species well worth growing, and which thrive under similar treatment. Thus, *B. Caldasii* is a very fine plant, bearing large heads of orange-coloured flowers on stems from ten to twelve feet. *B. acutifolia*, with red and yellow flowers, is a very handsome plant. *B. multiflora*, with the flowers orange and green, beautifully spotted, will, when well grown, bear as many as one hundred flowers on one growth, and is particularly ornamental when the seed-vessels burst, and expose to view its bright coral-like ripe seeds. *B. oculata* is a comparatively small species, growing from four to five feet high, and bearing clusters of rosy-purple spotted flowers. —CHARLES GREEN, *Gardener to Sir G. Macleay, Bart., Pendell Court, Bletchingly.*

THE BEST HARDY CLEMATISES.

NOW that the list of varieties of this popular flower—deservedly popular, since it furnishes us with one of the most gorgeous floral attractions of the late summer months—is becoming lengthy, it may be useful to take advantage of some notes made during the blooming season to make a selection of the most showy and striking sorts for general cultivation. Our notes were taken on the occasion of a visit to the nursery of Messrs. G. Jackman and Son, of Woking, where one of the most extensive collections to be found in this country is grown.

The Clematisees that flower during the late summer season belong to the sections represented by *C. Jackmanni*, *Viticella*, and *lanuginosa*. The flowers in the varieties of the Jackmanni type, which are four to six-sepaled, are large and bold, and being produced in profusion and in succession, the plants make and keep up a

great display. Those belonging to *Viticella* are similar, but more frequently four-sepaled, and in some cases not quite so large in size, but flowering in great masses and continuing long in bloom. Between these groups, the line of division is perhaps more artificial than natural. The *lanuginosa* varieties are larger than either in the size of the flowers, which are commonly eight-sepaled, but the blossoms are fewer in number, and therefore do not often present themselves in dense mass, as in the former cases; but they come on in succession, so that interest in the plants is kept up till frost closes the season. It is to these three groups that the varieties named below belong, and they have been selected with a view to supply diversity of colour and habit, combined with the greatest perfection of the flowers, for in the *lanuginosa* varieties especially there are some which have the sepals not only narrow, but narrowed to the base, so as to leave open spaces between them, and these are by no means so handsome as those in which the sepals, by reason of their breadth, overlap, and form a full flower.

None are so good or so effective amongst the dark purple-flowered sorts as *C. Jackmanni* and *C. rubella*, both of the true Jackmanni type, and both having a central tuft of green staminal filaments; they differ, in the former having the flowers of a deep blue-purple, while in the latter, they are flushed with velvety maroon-crimson, so as to take on a rich reddish tinge of colour, which contrasts well with the purples. These two should always be planted, whatever else is grown. Another pair of fine purples, which differ from Jackmanni in the tint of purple being of a puce violet, but still more in having the staminal filaments conspicuously white, are found in *C. Alexandra* and *C. Thomas Moore*; both these are very showy free-flowering sorts, of the same group as the former, and quite worth introducing, for the fine effect produced by the light-coloured stamens, which bring out in the blossoms a certain degree of resemblance to those of a Passion-flower.

The variety *C. tunbridgensis* is of a much paler shade of purple, more nearly approaching to blue, the flowers being six-sepaled, and of a fine full form. *C. Mrs. James Bateman* has a reddish-lilac shade in the newly-opened flowers, the older ones becoming bluish-lavender. *C.*

Victoria has deep reddish-mauve flowers. These all have, more or less, of the Viticella and Jackmanni blood. To the Jackmanni group, again, pertain two varieties which have the peculiarity of showing a well-defined bar of a very distinct shade of colour down the centre of each sepal—a distinct feature, which renders them very desirable and attractive; they are called C. Star of India and C. magnifica, the former being of a deep purple, with a dark maroon-red bar, the latter of a lilac-purple, with the bar of a bright claret-red.

The varieties named C. Lady Bovill and C. Madame Grangé, both of the same type as the foregoing, generally have peculiar concave rarely flattened sepals, so that the flowers are more or less cup-shaped, especially while young. Lady Bovill is extremely free-flowering, and of a greyish-blue colour; while Madame Grangé is of a very bright mulberry-crimson, and specially remarkable for the velvety richness of the colouring, in which respect it is unapproached by any other known sort. Another unique variety is C. Viticella rubra grandiflora, whose brilliant medium-sized claret-crimson flowers are wonderfully effective when lighted up by sunshine. It is a very free-growing, free-blooming, but rather slender variety, and one which, for its colour, should always be included in any selection, however limited in number, but the “grand flowers” must be understood as comparing with the ordinary Viticellas, and not with the larger-flowered Jackmanni and lanuginosa breeds.


The paler-tinted sorts are mostly those in which lanuginosa blood predominates. One of the best, unquestionably, is C. Lady Caroline Nevill, which is free in growth, large in size, fine in form, and striking in colouring, the French-white sepals being each marked by a distinct mauve-lilac bar. Another grand sort is C. Otto Froebel, one of the very largest varieties, the flowers being 8 to 9 inches across, with broad imbricating sepals, the colour being white, just flushed with flesh-colour passing to mauve, in a degree scarcely perceptible; the noble flowers of this variety compel admiration. Amongst the really useful tinted whites must be included C. lanuginosa candida, which is a good grower and a free bloomer, for all practical purposes admissible as a white, but actually more or less flushed with mauve when it first expands.

C. Madame Van Houtte and C. Henryi are the best of the older large pure whites. The former has finely formed and well imbricated flowers, while in the latter they are very large and telling. C. Duchess of Teck and C. Mrs. George Jackman are fine new sorts, white, with medium-sized flowers, very pure in colour, and exceedingly promising, the latter especially showing a strong tendency to be a free late bloomer, while the former is faultless in shape. To these must be added C. alba magna, which, as originally shown, was, on account of its large size and the extraordinary breadth of its sepals, much the finest of all the whites.

In this lanuginosa group, C. lanuginosa itself, one of the finest of its colour, a pale or greyish blue, must not be overlooked, for it produces noble flowers of good form, and in some abundance. Of a somewhat similar tone of colour are William Kennett, Princess of Wales, Excelsior, and Blue Gem, all of which have finely-formed flowers, varying slightly in character, shape, and tint, the three latter especially having a beautiful satiny surface; they are all really meritorious, and useful as being not only good summer varieties out-of-doors, but amenable to pot-culture under glass in the spring season.


Some few additional sorts may be usefully introduced into a collection, for the sake of variety and contrast of colour. Of these the old C. Viticella venosa, perhaps the best of its type, is of slender and elegant habit, free-flowering, having reddish-purple medium-sized flowers, prettily veined, and mottled over the paler centre. C. Viticella marmorata is another of the same slender and free-blooming habit, the colour a pale bluish lilac, mottled with white. C. picturata is a medium-sized and pale-coloured variety, of a very pale lilac, with a motley bar of pale blue down the sepals. Finally, C. cœrulea odorata, with purple sepals and conspicuous white filaments, though small-flowered and scarcely climbing, ought always to be grown for its powerful and pleasant hawthorn odour.—T. MOORE.

MARIE LOUISE D'UCCLE PEAR.

 HIS Pear promises to be one of great excellence. The fruit is of a good size, handsome in appearance, the flesh fine-grained and buttery in texture, and of an exceedingly rich flavour. The shape of the fruit is pyriform, the skin being yellow, marked with deep russet patches, in a manner similar to that of the Marie Louise. The tree is hardy, and moreover grows freely and vigorously, forming a handsome pyramid, and promising to be

a good bearer. A small pyramidal tree growing here has borne a good crop of fruit this season. The fruits, which are delicious in flavour, are now (November 11th) fit for use.—M. SAUL, *Stourton*.

SALAD HERBS.

HE Lettuce, the Endive, and the Chicory are all well known,—the Lettuce particularly so, while the others are only to be seen in gardens of note. If we were to ask the artisan how he liked Chicory leaves blanched in his salad, he would smile at the idea of eating Chicory tops, however much he might have had to do with the Chicory root in his coffee. This trade in Chicory is now, I believe, regulated by law, and a fair proportion of Chicory only is allowed, although the decoction still bears the name of the more expensive Coffee berry. As a salad herb, the Chicory is truly a bitter herb, of the easiest culture, and the leaves have only to be blanched in a warm dark place to be fit for immediate use. Our Southern neighbours prize salad herbs, and look upon even a Dandelion by the road-side as a waif that may yet some day return to the salad-bowl, and do it credit, and various means are resorted to in order to get this tiny morsel of salad duly blanched, such as laying a bit of tile or slate, or even a bit of green sod, over it, when, in moderate weather, in two or three weeks the green leaves will be yellow and crisp. [The Giant Dandelion, as improved by Madame Vilmorin, is very productive, mild, and good.] The Chicory is more troublesome to blanch than the Dandelion, on account of the leaves being long and narrow, and thickly set upon the plant; the root must be got up in winter and placed indoors, although it will blanch nicely under pots, with loose litter to keep frost out. There is little need for much trouble in blanching it, however, where a dark spot under a shelf in a glass-house can be got; but where the roots have been disturbed, they must be kept moist, otherwise the salad will be limp and tough, instead of crisp and yellow.

The gardener to the Prince Doria, in Italy, was surprised at our English notions of salad herbs. Parsley, he said, was always present with Italian salad, but never with the English salad; and the salad-bowl in that country was

made gaudy with flowers as well as herbs, Rose petals, and even Dahlia petals, were acceptable, but the bright-coloured flowers of the Nasturtium did double duty,—first, as garnishing to please the eye, and then being nicely flavoured to refresh the palate.

The chief burden of filling the salad-bowl is, however, borne by the Lettuce in summer time, and few plants will endure ill-usage better than this, for it will get to its full size by Midsummer from seed when sown in any spare spot; and if sown too thickly, it will bear transplantation like a cabbage plant, and yet thrive and do well. By far the most elegant of all the salad herbs is the Endive, with its foliage finely cut, and its heart of gold at Christmas, and set off in the salad-bowl by the dark slices of the Beet-root and the white rings of hard-boiled egg. I must not name the Onion along with other herbs of note, and it is only about one half of the year that I could name the Cucumber as a member of the salad fraternity. The Chili Capsicum, small in size, but rich in fire, can only be used in the form of Chili vinegar, but in that quiet form it is seldom idle.

When all the other good things are passed and gone, we fall back upon our Mustard and Cress for a never-failing supply; and Water-cress is often left to do all the work by itself, as if there existed no other salad herb. In Aberdeenshire, dulse is the only salad herb used by the artisan class, where a gallon of it can be had for a penny. This, on the other hand, is seldom, if ever, eaten in England, so far as I have seen.

There are a number of little matters of this kind that want ventilating, for in the case of the delicious Mushroom, whose flavour, when cooked, is equal to the best roast beef, the North countryman looks upon it with suspicion; and in Ireland, when the fields were covered with them, because the cows did not eat them, neither would the Christians, thereby reckoning the cow to be the wisest party. Lettuce, when boiled like cabbage and cauliflower, is an excellent tender dish. Our people want to be reminded of the importance of this raw material, by means of which a Frenchman would be in clover, and get half a meal of wholesome provisions.

Salad is likely enough to hold its own as a

luxury, and to enlist new recruits. Although oil in cookery is not popular, the salad is nothing without it; and we see by the daily papers that cookery is beginning to be patronised, and money paid for instructions in this truly useful art. I have, however, said enough to vex those who care for none of these things,

and think every Mushroom a toadstool, and all salad herbs to be treated as we are told to treat Cucumbers—first, to dress them, and then cast them away. The day for these trite sayings, however, is gone by. Cucumbers are eatable, and men crave for them, and I am glad to see that they are cheap and good in our markets. —ALEX. FORSYTH, *Salford*.



NORWICH PROLIFIC NUT.

THE history of this new Nut is thus given to us by Messrs. Ewing and Co., of Norwich, in whose nursery it was raised:—"The original plant is from fifteen to twenty years old. It came up promiscuously in the nursery amongst other stock, and was left out of curiosity. It still stands where it first grew, and produces freely every year, and has done so for some years past. The fruit is quite distinct from and much larger than that of any other variety we grow. The shell is almost as thin as in the Cosford, and is well filled, the kernel being of good flavour. We think it will also

turn out to be a good keeping sort. We do not observe that it often produces fruit in clusters, the nuts being usually two or three only on a stalk, and most commonly two. It is, however, a very prolific sort, and plants not more than two feet high frequently produce fruit of very large size."

The young wood of this variety of nut has a thick covering of hairs, some of which are tipped with glands; and the leaf-stalks and leaves are similarly clothed. The leaf is roundish, deeply cordate at the base, with shallow angular lobes, and coarse serratures,

The catkins have apiculate scales, hairy on the outer surface. The nuts grow in pairs, or more rarely in clusters of three; the husks are as long as or longer than the nut, open at the throat, strongly ribbed, hairy, slit to the base on one side, and parted half-way on the other, the two divisions deeply cut into lanceolate, sometimes forked segments. The nuts are short, plump, nearly square in outline, two and three-quarter inches in circumference, flattish at the base. The kernels, which are full and of excellent flavour, are enveloped when ripe in a whitey-brown skin, enclosed by a somewhat thin and light brown shell.

The new variety seems to come nearest to the Cosford nut, in the characters of the short husk and somewhat tender shell, but is of different shape, being squarish rather than oblong, and the husk in some examples is quite as long as the nut. Our woodcut has been prepared by Mr. W. G. Smith, from specimens received from Messrs. Ewing and Co.—T. MOORE.

DWARF FRUIT-TREES.

PRUNING AND ROOT-PRUNING.

PRUNING is a point of practice of much difficulty to be understood by amateurs. Judiciously done during the summer, it is effectual in preventing the energies of the tree running to waste in the production of useless growth, by controlling and concentrating them in the formation of fruit-spurs, and renders winter pruning almost needless. Supposing, then, young trees from the nursery to have been properly planted, and to have begun making their first season's growth, it will be necessary, as soon as they are well in leaf, to commence pruning, which is to be done as follows:—Examine any branch issuing from the main stem, and it will be seen that a number of leaf-buds have started into growth all along it, producing branchlets or shoots, those nearest the growing end being most vigorous. Each of these side shoots must have its point pinched off by the finger and thumb as soon as five leaves have been developed, leaving on only three leaves. *The shoot at the end of the branch must be left untouched.* Treat every branch in the same manner, it being a good rule to begin with the upper branches, as they will first produce the requisite number of leaves. *The leading shoot of the tree must also be left untouched.* The first pinching of one of these trees will extend over odd moments during about three weeks. From time to time, all through the growing season, the operation must be repeated whenever new side shoots appear and have made five leaves. About the third week in July, or a little later (not sooner), *the terminal*

shoot of each branch and of the leader must be pinched off. This will cause a plentiful supply of sap to be directed towards the pinched-back side shoots and the buds which have remained dormant. The first season after planting, the amount of pinching required will generally be very small, as the removal and replanting will so check vital action that only moderate growth will be made in the majority of cases. The second season the growth will be much more vigorous, if the trees are in health.

Autumn Pruning will be a very trifling proceeding, if the foregoing directions have been followed, for no useless wood will remain to be cut away. Indeed, each tree will need merely a passing glance to see if any shoots have been overlooked, and such shoots only as have escaped attention during the summer will need cutting back to about the same length as those which earlier in the season have been pinched.

Root-pruning will rarely need be done before the autumn of the second season after planting. Its object is to encourage fruitfulness by arresting undue luxuriance of growth. In the month of October, as soon as the leaves begin to change colour, is the best time for the operation, which is to be performed in this way:—With a steel fork dig a trench all round each tree at a distance of two feet, taking care to avoid injuring the roots. After getting down deep enough, place the fork underneath the tree and gently lift it out of the ground. If any whip-like roots are found straggling to a greater distance than the bulk of the other roots, shorten them back with a sharp knife; then cut smoothly the points of any roots broken or bruised in the process of lifting. Next level the station, and replant in the same place as before directed, adding fresh turfy soil next the roots. The second lifting need not take place till the fourth year after first planting, or if the growth is not vigorous in the fourth year, not till the fifth, by which time the tree should be in regular bearing. When good crops are produced, all sorts of pruning will be reduced to a minimum.—(*Abridged from J. C. Wheeler and Son's Catalogue of Fruit-trees.*)

OLD FUCHSIAS.

SOME of the imported sorts which were grown in our gardens before hybridizing commenced, appear to be considerably hardier than those of more recent introduction. There are some plants of *F. conica* and *F. virgata* which have been growing here for upwards of thirty years, on some rockwork in the open garden, without any protection being given, and the severest frosts do not seem to affect them. They come up every spring, and grow healthily and vigorously throughout the



W H Fitch. del.

Nectarine Galopin

Chromo. G. Severeyns. Brussels.

season. We had two beds of *F. globosa* which had been planted quite as long, and had lived through all the severe frosts we have experienced, by having only a slight covering of straw or fern thrown over them; these flowered freely every season, but they had to be removed this spring, to make room for some carpet-bedding.

We have also another old globe-flowered sort, called *Trentham*, which has been growing in the conservatory for upwards of twenty years. It is one of the fast-growing, rambling sorts, and is admirably adapted for the purpose of growing up pillars, and covering trellis-work. It runs away occasionally into gross rampant shoots of eight or nine feet in length,

and flowers freely up to about Christmas. I do not think this variety is much known, as I do not remember to have seen it anywhere else. To my fancy, there is no other sort equal to it for the conservatory, as when trained up amongst other creepers, and allowed to intermingle its pendent clusters of bloom with them, it is very effective. The foliage is large, and is of a dark healthy green hue, as will be seen from the specimens sent herewith.—J. WEBSTER, *Gordon Castle*.

* * * It is a fine bold-habited sort, and very ornamental, the buds being large and oblong, of the shape of those of the old *F. globosa elegans*, and the sepals are very large and broad.

NECTARINE GALOPIN.

[PLATE 504.]

IN appearance, this fine Nectarine may, perhaps, not be termed beautiful. In some respects, it resembles the Stanwick, both as to its appearance and quality; but it is superior to that variety in every way, and entirely free from any of its defects.

The fruit is large; it is, indeed, one of the largest of Nectarines. In shape it is roundish, a little flattened at the stalk. The skin is rather thick, of a yellowish-green colour, flushed on the sunny side with dark brown, and marked here and there with splashes of reddish violet, according to the amount of exposure. The flesh is greenish, bright red against the stone, from which it parts freely, very firm in texture, yet extremely

juicy and melting, very rich and sugary, with a most decided piquancy of flavour, and slightly perfumed. The flowers are large and pale in colour. The glands of the leaves are reniform in shape. The tree is a free grower and a good cropper.

This fine Nectarine was raised by M. Galopin at Liège, Belgium, some few years ago, and is deserving of extended cultivation under glass in this country, where its high merits require but to be known to be appreciated. The fruit from which the accompanying figure was taken was grown in the garden of the Royal Horticultural Society at Chiswick, and we find the variety is noticed in *Scott's Orchardist*.—A. F. B.

WOOLHOPE CLUB FRUIT SHOW.

DURING the closing days of October—the 29th and 30th—after our monthly packet had gone to press—a considerable Exhibition of Apples and Pears, by far the best Fruit Show of the year, was held at Hereford, under the auspices of the Pomona Committee of the Woolhope Club. There were contributions from Herefordshire, Gloucestershire, and Worcestershire, from Berkshire, from Kent, and from sunny France, the superiority of the Kentish over the local fruits being very obvious, while these in their turn were quite excelled by the French examples. Thus “climate told its tale.” The exhibits were arranged under five divisions:—1, nurserymen; 2, amateurs; 3, open to all; 4, vintage, cider,

or perry fruit; 5, cottagers. Altogether, there were 38 classes, and nearly two thousand plates of fruit.

In the first division, Mr. Killick, Maidstone, and Mr. Barnes, Gloucester, showed CULINARY APPLES, the former, who was placed first, exhibiting Bedfordshire Foundling, Cox's Pomona, Ecklinville Seedling, Lord Derby, Lord Suffield, very fine, Peasgood's Nonsuch, Stone's Apple (Loddington Seedling), Tower of Glammis, and Warner's King. Mr. Barnes's collection contained Broad-end, Caraway Russet, Devonshire Queen, Flanders Pippin, and Kentish Pippin. In the class for DESSERT APPLES, Mr. Griffiths, Tillington, was first, and Mr. Barnes second. Mr. Barnes's collection of DESSERT PEARS

was placed first, and included Beurré Quetclot (Comte de Lamy), Bishop's Thumb, Duchesse d'Angoulême, Marie Louise, Napoléon III., Phelps' Bergamot, Vicar of Winkfield. Mr. Grove, Tupsley, who was second, showed amongst others, Beurré de Capiaumont, Brown Beurré, and Marie Louise. In the class for CULINARY PEARS, Mr. Taylor, Sherdington Court, Cheltenham, was first, with Uvedale's St. Germain (2 lb. 12 oz.); Dr. Chapman, second, with Catillac (2 lb. 6 oz.); and Rev. W. H. Tweed, third, with Catillac, (2 lb. 4½ oz.)

The amateurs' division (including gentlemen's gardeners) brought out a splendid competition. For DESSERT APPLES, Mr. Haycock, Barham Court, Maidstone, was first, his collection containing Cox's Orange Pippin, Duchess of Oldenburgh, Golden Pippin, Kedleston Pippin, King of the Pippins, Lord Derby, Old Nonpareil, Reinette du Canada, Reinette Grise, Ribston Pippin, Sykehouse Russet, White Nonpareil. Mr. Young, gardener to Sir H. Scudamore-Stanhope, Bart., Holme Lacy, Hereford, who was a close second, showed Claygate Pearmain, Cornish Gilliflower, Court-Pendu-Plat, Duke of Devonshire, Golden Reinette, King of the Pippins, Margil, Mother, Pomeroy, Reinette du Canada, Ribston Pippin, and Winter Pomeroy. In the class for CULINARY APPLES, Mr. Haycock was again first, with Bedfordshire Foundling, Belle du Bois (Gloria Mundi), Calville Blanche, Dumelow's Seedling, Ecklinville Seedling, Emperor Alexander, Hawthornden, Lord Suffield, Northern Greening, Reinette du Canada, Small's Admirable, and Washington. Mr. Higgins, Thinghill, was second, with a good collection, comprising Alfriston, Blenheim Pippin, Dumelow's Seedling, Emperor Alexander, Lord Suffield, and Warner's King. Mr. Young was third.

For DESSERT PEARS, in the amateurs' section, Mr. Haycock was first, his collection including Beurré de Capiaumont, Beurré Hardy, Doyenné Boussoch, Duchesse d'Angoulême, General Todtleben, Marie Benoist, and Pitmaston Duchess. Mr. Young, who was second, had fine fruit of Althorp Crassane, Beurré Bachelier, Beurré Clairgeau, Beurré d'Amanlis, Beurré Hardy, Duchesse d'Angoulême, Gansel's Bergamot, General Todtleben, &c. Mr. Cox, Madresfield Court, was third; Mr. Taylor, Sherdington Court, and Mr. Shingles, Tortworth Court, were highly commended, and Mr. Ward, Stoke Edith Park, was commended. In a smaller class of Dessert Pears, Mr. Young, Holme Lacy, was placed first, with fine fruit of Beurré Hardy, Beurré Superfin, Délices d'Hardenpont, Duchesse d'Angoulême, Doyenné Boussoch, Gansel's Bergamot, General Todtleben; Mr. Williams, Lower Eaton, was second, with Beurré Bachelier, Beurré Clairgeau, Beurré Superfin, Hacon's Incomparable, &c.; Mr. Ward was third, with

Beurré Bosc, Brown Beurré, Colmar d'Arenberg, Gansel's Bergamot, Louise Bonne of Jersey, Maréchal à la Cour, Marie Louise, &c. For CULINARY PEARS, Mr. Haycock was first, with Bellissime d'Hiver, Catillac, and General Todtleben; Mr. Taylor second, with Catillac, Uvedale's St. Germain, Vicar of Winkfield, &c.; and Mr. Froggatt, Belmont, third, with Beurré Diel, Catillac, and Uvedale's St. Germain.


In the open division numerous prizes were awarded, Mr. Haycock being most successful. For CULINARY APPLES, he was first with six fruits of Belle du Bois (Gloria Mundi), weighing 5 lb. 10½ oz.; Mr. Higgins was second with Warner's King, weighing 4 lb. 11 oz.; and Mr. Taylor third with Warner's King, weighing 4 lb. 2 oz. For DESSERT PEARS (present flavour), Mr. C. Ross, Welford Park, Newbury, was first with Seckel; Mr. Haycock second, with Pitmaston Duchess; Dr. Chapman third, with orchard-grown Louise Bonne of Jersey. In a class for NEW APPLES, Mr. C. Ross showed a variety of medium size, raised from a pip of Scarlet Nonpareil, which was sown in the spring of 1868; planted out in 1870, transplanted in 1874; bore fruit in 1878, which was cooked in January, 1879; bore 90 fruits in 1879, some of which were cooked in September, and were highly appreciated at table; it is a strong grower, and promises to be a good bearer. Mr. Ballard, Ledbury, also showed a new pippin, called *Baylis' Kernel*, in use from Christmas till March, and considered by him a valuable dessert apple.

Amongst the French fruit, there were some Belle Angevine (Uvedale's St. Germain) Pears, which weighed over 1 lb. each. Messrs. J. C. Wheeler and Sons, Gloucester, sent a large and meritorious collection of Dessert and Culinary Apples and Pears, which received high commendation.

Mr. L. Killick, in commenting on this display in the *Journal of Horticulture*, whence we quote, observes that the Apple of the show was certainly Warner's King, and he strongly advises those who have space for it to plant a tree or two of this variety. "If later sorts are also required, his experience is in favour of Tower of Glammis and Yorkshire Greening, which crop well. Although Warner's King was surpassed in weight by a splendid dish of Belle du Bois (Gloria Mundi), it is a better all-round apple. Warner's King will grow everywhere, which Belle du Bois will not. The six fruits of Belle du Bois weighed 5 lb. 10½ oz., a good weight, considering that Apples are one-fifth less in size this year than usual. The Ecklinville Seedling, again, was good, and ought to be in every garden; but if grown for market, it must be gathered before it is ripe, as it is very tender, and easily bruised. Cox's Pomona has finished well everywhere this year."

EARLY-FLOWERING CHRYSANTHEMUMS,

FOR SUMMER AND AUTUMN BEDDING.


HE past season has been unsatisfactory in a variety of ways, and flower gardening, amongst other matters, has not escaped, for many plants have not come up to the expectation formed concerning them at planting time.

We have had here about the borders for several years a few of the early-flowering race of Chrysanthemums, and have observed how precociously and profusely they bloomed, continuing, moreover, until cut by sharp frost. This last spring, when they had started, and had made from two to three inches of growth, we lifted the old stools, and broke them up, potting all the pieces that had roots into small pots singly, while those not rooted were made into cuttings. They soon formed roots, and were potted into free soil, and kept close for a few days till they got established. They were then allowed plenty of air, and were kept growing on steadily, being at the same time pinched-in freely, in order to make good bushy plants by planting-out time, which should be early in May, if they have been properly hardened-off. We have several large beds of them, which at present (November 5th) are in full bloom, and have been so for the last three months; they are still studded with buds in all stages of development, and will go on blooming until cut by sharp frosts.

The few sorts we have tried are:—Frederic Pele, Chromatella, Madame Pécol, Précoité, and Scarlet Gem.—A. H., *Thoresby*.

VILLA GARDENING.

December.

FTER we have done with the fogs of November, December days will often be grey and cold, and tree and field, hill and stream will look desolate and bare against the wintry sky. It is a month of pause in nature, but though there is little that is active in the garden, except in warmed glass structures, it is, nevertheless, a time of preparation for the growing season that will surely follow on the heels of winter.

Greenhouse.—*Chrysanthemums* are blooming very late this year generally, and so the villa gardener may reasonably expect, if he has sufficient warmth to keep frost at bay, that he will be able to enjoy his head of bloom up to Christmas at least. Happy is the villa

gardener who has his greenhouse heated, for all through the winter—even such a winter as that of 1878-79—he can have something in bloom, pleasant to the sight, and satisfying to the heart. *Chrysanthemums* in pots will be helped by applying a little stimulus, such as liquid manure, Clay's Fertiliser, or any compound of that character. *Chinese Primroses* are now coming into flower, and will be very pretty all through the winter, when the pots in which they are growing are filled with roots, and they are so well drained that water passes away from the roots freely. This is a matter of great importance in the case of the Chinese Primrose, as when the plants are in ill-drained soil they soon get sickly, and are of little value from a decorative point of view. *Abutilon Boule de Neige*, and some of the other varieties, are very useful and pretty plants for flowering in a greenhouse at this season of the year; even in a cold house with only the solar warmth by day to heat it, *Boule de Neige* is flowering on very nicely, though it cannot last much longer, when cold moist weather comes. *Zonal Pelargoniums* are holding on in flower; so are *Bourvardias* and the young plants of *Fuchsias*, *Salvia splendens*, and subjects of a similar character. All decaying leaves should be removed, as they create damp, which soon spreads, and if unchecked does much harm. What watering is required should be done before mid-day, and when the sun is shining, if possible, so that the shelves can dry before night, and frost (if imminent) sets in. It is all the more necessary in the case of a cold house that this precaution be taken; and in arranging the plants so that the injurious effects of frost should be minimised as much as possible, the tenderest plants should have the warmest places, and the hardiest plants the coldest.

Cold Frames.—*Christmas Roses* should now be coming into flower, and as soon as they show signs of throwing up the flower-stems, should be removed to the greenhouse, to assist in the production of the blossoms. The best plan to get Christmas Roses early is to pot up some clumps in July, and place them out of doors in the shade till October, and then place them in a cold frame and keep them a little close, to excite them to growth. Any plants in pots that are going to rest and casting their leaves should be looked over, and the decaying leaves removed. It is a good plan to occasionally stir the surface soil, as it benefits the plants, as well as gives them a neat appearance. The pretty blue *Myosotis* is an excellent subject to pot up for flowering in early spring, and it does well in a cold frame; some strong plants potted up in August are already beginning to flower. During this and the following month, much bloom cannot be looked for in

plants wintered in a cold frame; but there is a little interest attaching to looking over them, keeping them neat and clean, and hunting for any vermin that may infest them. A few imported crowns or clumps of *Lily of the Valley* should now be potted and placed in the frame for a time, and then removed to the greenhouse, to be assisted into bloom.

Flower Garden.—If the flower-beds from which the summer-blooming plants have been taken are not used for winter or spring bedding, they should be dug over deeply and thrown up rough. Besides sweetening and pulverising the soil, the beds look all the better for being made to look neat after this fashion. Some have predicted a severe winter, and already we have had a foretaste of some rough weather, therefore it will be wise to take care of newly-planted choice shrubs, &c., by mulching the roots with some protecting material. Now that the weather is dry, the mixed border should be gone over, and all decaying stems, &c., cut away; after that, some dung and leaves can be scattered over it, which will give protection during winter, and greatly assist the plants in early spring. The early-flowering *Wallflower Harbinger* is very pretty just now, and is throwing up many flowers; and some *Pansies*, divided and planted out in August, are flowering freely, and will do so till hard frost destroys the blooms. These are mentioned to show what can be had in bloom in the flower garden at this season of the year. We may get severe frosty weather before Christmas, and the villa gardener will do wisely to provide protection for any partly tender things that must remain in the open air during the winter.

Fruit Garden.—The pruning and nailing of *Wall-trees* should now engage the attention of the gardener when the season is favourable; but he should be careful not to lay in the branches too thickly. *Gooseberry trees* can be pruned, thinning out the shoots pretty liberally, especially in the middle of the bushes; and then if the trees form a plantation, the soil between them may be dug, taking care not to injure the roots. *Black Currant trees* should be pruned in a similar manner to the *Gooseberries*, but not thinning out the shoots so severely. In the case of *Red and White Currants*, the principal shoots can be left at a much greater distance, and the small shoots spurred in. If old shoots of *Raspberries* were cut away immediately after the fruit was gathered, and the young shoots thinned out, there will be but little to be done, except to restake the plants, if necessary, and cut off the tops of the remaining shoots.

Kitchen Garden.—Some spring *Cabbage* for succession may still be planted out, if there is nothing more to occupy cleared ground. Those who grow *Jerusalem Arti-*

chokes should dig and store them away, for winter consumption. Slugs have been very troublesome, but the frost will no doubt check their ravages; a little fine lime scattered about their haunts, or on plantations of *Cabbage*, &c., will keep them at bay. The roots of *Rhubarb* should be dug amongst carefully, so as not to injure the side-roots. Any ground that is full of weeds (and it is by no means an uncommon occurrence, after such a summer) should be dug and thrown up roughly. The more weeds and all garden refuse are cleared away from the garden ground, the greater will be the reduction of harbour in which slugs, &c., can secrete themselves, issuing forth in mild weather to do damage to the crops.—SUBURBANUS.

GARDEN GOSSIP.

THE PELARGONIUM SOCIETY has just issued its Prize Schedule for 1880, which is divided into three sections. In section 1, for new varieties not in commerce, intended to encourage raisers of novelties, there are eight classes, and prizes to the amount of £26 5s. In section 2, for specimens of older kinds, where superior cultivation, as well as high quality of flower, is required, there are eleven classes, and £98 5s. is offered in prizes. In section 3, for cut flowers, there are four classes, and prizes to the amount of £17 5s. The total amount of prizes offered is £141 15s. The Society has hitherto been well supported, but there is ample work for it to accomplish, if the sympathies of a wider constituency were secured. The annual exhibition for 1880 will be held either late in June or early in July, but the date is not yet fixed. The Pelargonium Society's Certificate will be awarded at the annual exhibition to deserving new varieties in all the types of the Pelargonium family, and notice will also be given of two additional floral meetings, on which novelties may be shown. For these Seedling flowers blank printed forms have to be filled up with descriptive particulars. Non-members may compete for the certificates, but not for the money prizes.

—THE ROYAL HORTICULTURAL SOCIETY has announced the following dates for its Exhibitions and Meetings during the year 1880:—Whit-Monday Show, May 16th; Great Summer Show, June 8th, 9th, 10th, 11th; Artisans' and Cottagers' Show, August 2nd (Bank Holiday); Conversation, May 26th; Evening Fête, July 21st. The date of the Rose Show and Exhibition of the Pelargonium Society, about the end of June or early in July, will be announced later on. The Fruit and Floral Committee Meetings for the year will be held on the following Tuesdays:—January 13th, February 10th, March 9th, 23rd; April 13th, 27th; May 11th, 25th; June 8th, 22nd; July 13th, 27th; August 10th, 24th; September 14th, October 12th, November 16th, December 14th.

—THE NATIONAL ROSE SOCIETY met on October 14th, under the presidency of R. G. N. Baker, Esq., when Mr. W. Scott, the hon. treasurer, reported that, after paying all expenses, there remained a balance in hand of £130. It was, therefore, resolved that the outstanding liabilities to

prize-winners for the year 1877 should be paid, leaving a balance of £60, the Society being then entirely free of debt. The London Exhibition of 1880 is to be held at the Crystal Palace, Sydenham, on July 3, but in the case of the Provincial Exhibition, the committee was desirous to receive applications from any other towns, other than Manchester, which might be willing to receive the Society. Amongst the prizes announced was a medal from the proprietors of the *Journal des Roses* for 24 Roses, three of each, full-blown, half-blown, and in the bud.

— THE WEST OF SCOTLAND PANSY SOCIETY has just been established, for promoting the cultivation and exhibition of Pansies in the district having Glasgow for its centre. A committee, representing about forty towns and villages, was first formed, out of which the executive committee has been chosen. The principal office-bearers, aided by a strong executive committee, are:—Hon. President: Lord Provost Collins, Glasgow. President: Bailie Goodwin, Kirkintilloch. Vice-Presidents: Bailie Storrie, Whiteinch, Partick; Peter Lyle, Kilbarchan. Treasurer: Mr. McIntosh, Dennistown, Glasgow. Secretary: Mr. McCrorie, Kilbarchan.

— THE arrangements of the ROYAL BOTANIC SOCIETY for 1880 include Spring Exhibitions on March 24th and April 21st; Summer Exhibitions on May 19th and June 16th; and an Evening *Fête* and floral exhibition on Wednesday, June 30th. The special exhibitions include Roses by Mr. William Paul, from May 5th to 12th; Rhododendrons and American plants by Mr. Anthony Waterer, daily in June; and flowering and fine-foliaged Annuals, by Messrs. James Carter and Co., in June and July.

— FOR a general crop, the CHAMPION POTATO is highly spoken of on all sides. It is a round Potato, with very deep eyes, and, according to some, only second-rate in quality; but then it is very productive, and relatively little affected by disease, and these two latter qualities go far to outweigh slight defects in its appearance.

— THE Cape *SENECIO SPECIOSUS*, which has been confounded with *S. concolor*, has lately been introduced by Mr. W. Bull, and proves to be a very handsome half-hardy plant, having a thick fleshy root-stock, with several radical, and a few cauline, pinnatifidly-lobed, oblong-oblancoate blunt-ended leaves, which are thick and fleshy, and covered with viscid hairs, as are also the stem, bracts, and involucre; the hairs on the branches of the stem and involucre are sometimes very long and shaggy. The stem branches in a corymbose manner, and bears from 3-10 radiato flower-heads $1\frac{1}{2}$ inch in diameter; both ray and disk being of a beautiful bright purple. It succeeds well in the open air during the summer months.

— THE *CATALPA SPECIOSA*, an ornamental tree from the Central States of the American Union, is stated to be considerably harder than the *C. bignonioides*. Professor SARGENT's distinctive characters of this species or variety are: the more gradually tapering leaves, larger white flowers, larger and more compressed seed-vessels, often 16 to 20 inches long, and shorter, broader seeds, with wings of equal width at their rounded ends. The bark is also of a darker hue, and more deeply furrowed, and the wood is considerably heavier. The tree is taller and handsomer than *C. bignonioides*,

and it bears the severest winters without injury up to 42° N. lat. Professor SARGENT has sent seeds of *C. speciosa* to Dr. BOLLE.

— THE *ACER GINNALA* of the Amoor country, is a handsome hardy tree, which puts on the richest autumnal tints. In the sunlight the decaying leaves are of a singularly beautiful, glowing, ruby-red. The contrast between the autumnal tints of this species and those of the better-known North-American *A. rubrum*, is very marked, the latter displaying but little deep colour, only a leaf or two here and there being partially or nearly entirely crimson, while the prevailing tint is a bright, clear, golden-yellow.

— AMONGST recent BOTANICAL APPOINTMENTS, we may note that,—Dr. H. Trimen has been appointed Director of the Ceylon Botanic Garden, in the room of Dr. Thwaites, who retires on a pension; Professor Drude, of Göttingen, has been appointed Professor of Botany at Dresden, in succession to the late Professor Reichenbach; and Count Solms Laubach has succeeded to the chair at Göttingen, vacated by the death of Professor Grisebach.

— THE fruit of *PTELEA TRIFOLIATA* has been found by Mr. Charles Baltet to make equally as good a bitter for beer as hops. At a recent agricultural exhibition at Châlons-sur-Marne, Mr. Ponsard exhibited a sample of beer in which *Ptelea* fruits were substituted for hops. The quality and flavour of this beer are reported as equal to the best Strasbnrgh beer. In the United States this tree bears the name of hop-tree. In this country it usually fruits very copiously, even while quite young.

— THE showy *SENECIO PULCHER*, Tyerman's Groundsel, may be propagated freely by root-cuttings, but the Rev. J. T. Boscawen writes that he found this too expensive, and therefore had recourse to an old plan of his when a boy of raising seed by planting it when unripe, or even green, and he was beyond expectation successful. This fact, he observes, should be known, as one cannot raise too much of Tyerman's Groundsel.

— A NEW ornamental Willow, *SALIX VITEL-LINA BRITZENSIS*, is recommended in the *Hamburg Garden Zeitung*, and now that the planting season is approaching it may be useful to quote the recommendation. This novelty is said to have the bark of the young shoots coloured red, like those of *Cornus alba (sibirica)*, and if so, the plant must afford a fine winter contrast to those of the golden Willow. It is in the hands of M. Späth, of Berlin.

— THE *HYPERICUM OBLONGIFOLIUM* is an evergreen, free-blooming, hardy flowering shrub, of good habit, and bearing pretty flowers. It is a native of Nepal, and does not appear to be as well known or as generally grown as it deserves to be. It forms a low-growing, round-headed, branching shrub, of from two to four feet high, with oblong, smooth leaves, somewhat crowded towards the extremities of the branchlets, every one of which, from midsummer to the end of October, bears a corymb of large golden flowers of considerable substance and fine waxy texture. It is a choice subject for the front parts of shrubbery borders.

— **AMONGST WINTER-FLOWERING ZONAL PELARGONIUMS** of first-class properties, varieties which gave promise of continuing to bloom onwards as long as the necessary stimulus was forthcoming, we recently noted the following, in Mr. Cannell's collection at Swanley:—*Sibyl Holden*, a charmingly attractive deep rose, with a dash of purple in the tinting; *Mrs. Pearson*, a self-coloured salmon-rose of great beauty, quite an acquisition; *Henry Jacoby*, the darkest crimson-scarlet in cultivation, and one of the most attractive, fine in every way; *Guinea*, a bright, yellow-flushed salmon-scarlet, a most striking flower when seen in judicious contrast, and perhaps one of the most effective yet raised; *Gathorne Hardy*, a light orange-scarlet, a very pleasing variety of sterling merit; and *Mrs. Moore*, a new oculate variety, white, with bright cerise markings round the eye, one which is said to eclipse everything in that style before obtained, and which is certainly a very beautiful flower, large and fine in form, and making a splendid truss.

— **THE** following recipe for the cure of **SCALE ON FRUIT-TREES** has been published by Mr. E. TIDMARSH, Curator of the Graham's Town Botanic Gardens:—Into a round-bottomed iron pot put 8 lb. of soft-soap and 2 quarts of paraffin oil; place the pot over a rather slow fire, consisting of embers only, with a stout stick, vigorously stir the mixture, *till the soap has absorbed the whole of the oil.* To the paste thus produced, add 20 quarts of water, boiling if convenient, and leave the mixture to simmer till the whole of the soap is dissolved, when the result will be a milky fluid, with little or no oil visible on the surface. The pot may now be taken off the fire, and stood aside till the liquid is cooled down to about new-milk heat, when it may be applied to the infected trees, a garden-syringe being used for the purpose. The application should be so managed that every part of the tree may be covered with a thin film of the mixture; to effect this with as little waste as possible, use the finest rose to the syringe, and drive the mixture with force through and about the foliage and branches of the trees. When the plants to be dressed are in pots, let the branches be held over some vessel, such as a tin bath or a packing-case with a zinc lining, in order that waste of the mixture may be avoided. Before removing the plants from over the vessel, shake the branches, so as to dislodge any superfluous mixture; then place them in a horizontal position, till nearly dry, so as to prevent the oily matter running down the stems into the soil. Any portion of the liquid that may not be used at the time of making will keep good for months; a scum will form on the surface, but that will disappear, on again warming and stirring it. This mixture is not at all difficult to concoct, but to insure a good result, it is absolutely necessary to strictly observe the few words printed in italics. It is hardly necessary to observe that the number of pounds of soap and quarts of paraffin and water are simply quoted as proportions.

— **THE** rare *DISA MACRANTHA* has been flowering this autumn in the plant-houses at Glasnevin. It may be compared to a pure white form of *D. grandiflora*, with the divisions of the perianth dotted with purple towards the throat and somewhat smaller. The flowers grow in an erect spike of about half-a-dozen together, white spotted with deep purple, reminding one of those of *Colax jugosus*. It requires the same kind of treatment as the better-known *D. grandiflora*.

— **THE** remarkable distinct *DISA GRANDIFLORA* VAR. *PSITTACINA* has been flowering in Mr. Williams's nursery at Holloway. Its blossoms are about the same size as those of the type, but the upper hood-like portion of the flower is of an orange-yellow colour, and more distinctly veined. The sepals are green at the base, and also at the tips, the intervening space being of an orange-red hue, altogether affording a striking contrast of colour, and aptly suggesting the name of the Parrot *Disa*. So says the *Garden*.

— **FLOWERS** of *CLEMATIS DURANDI*, a rather new Continental Clematis, have been kindly sent to us by Mr. George Paul. It is a near representative of the hardy herbaceous *Clematis integrifolia*, and has, like that plant, simple leaves, and deep, dull purple flowers, larger, and considerably broader in the sepals than in the older species. We presume it does not run much, and so may be looked on as a tall herbaceous plant requiring support, rather than as a genuine climber.

— **M.** DUCHARTRE, at one of the recent meetings of the *Société Centrale d'Horticulture de France*, gave an interesting explanation of the origin of some magnificent MUSHROOMS, which had been obtained direct FROM THE SPORES by M. Charollois. The spores were sown on a plate of glass, kept constantly moist, and dusted over with spent dung; under these conditions mycelium (spawn) was formed, which when planted yielded the fine specimens in question. The remarkable result obtained by M. Charollois may possibly be turned to account in the culture of mushrooms, and—which is still more important—it may lead to successful experiments in the cultivation of other kinds of Edible Fungi, which it would be interesting, to say the least, to be able to propagate, and the culture of which has hitherto been regarded as all but impossible. We may mention, as examples of the kinds we have in view, such sapid species as *Agaricus procerus*, *Coprinus comatus*, &c. Even the cultivation of the brilliantly-coloured Poisonous Fungi, as objects of ornament or instruction, may be in this way rendered practicable.

Obituary.

— **MR.** GEORGE GORDON, A.L.S., died on October 11th. He was long associated with the Horticultural Society's Garden at Chiswick, to which he was admitted as a student in 1828, on the recommendation of Mr. Henry Groom. He was born at Lucan, co. Dublin, on February 25th, 1806, and commenced his gardening career in 1820, under his father, at Sterling House, Meath. After being employed at Lucan, Bethnal Green, and Colvill's Nursery, Chelsea, he entered Chiswick Garden, where in due time, he was selected as one of the departmental foremen, under Mr. Donald Munro, the Arboretum being his appointed field of labour, and in this he had abundant opportunity of acquiring a knowledge of hardy trees and shrubs, of which he fully availed himself. He made a special study of the coniferæ, and acquired such a knowledge of them as to be regarded an authority in all questions of garden nomenclature relating to them. In 1858 he published the *Pinetum*, of which a *Supplement* was issued, and a second edition in 1875. His dried specimens of conifers have been acquired by purchase for the Herbarium of the Royal Gardens, Kew.

